DEPARTMENT OF ENERGY

ANNUAL PERFORMANCE PLAN
for FY 2000

SECRETARY OF ENERGY
BILL RICHARDSON

Editor's Notes

This plan addresses three years' performance: status of FY 1998 Performance Agreement commitments, final edits to the FY 1999 performance measures and goals proposed with the FY 1999 budget, and proposed FY 2000 performance measures and goals within DOE's budget request for FY 2000. The significant changes to the FY 1999 performance measures and goals are indicated by striking out ~~text~~ to be removed and underlining text to be added with footnotes explaining the change.

DOE's Inspector General and the Power Marketing Administrations are included in this plan. However, the Federal Energy Regulatory Commission (FERC) has prepared separate GPRA documents and their resources but not performance measures are included in this plan.

This plan was prepared by the Office of Policy, Office of Strategic Planning, Budget and Program Evaluation with input from all offices in DOE. The DOE point of contact for this document is Bill Kennedy, (202) 586-0423, bill.kennedy@hq.doe.gov.

This document is available on the World Wide Web as part of the Department's Strategic Management System found at: http://www.doe.gov/policy/sms/sms.html

DEPARTMENT OF ENERGY

OVERVIEW

This Annual Performance Plan for the Department of Energy expands on the Clinton Administration's performance plan for FY 2000 and is an overview of the details contained in DOE's full budget submission for FY 2000. This plan is a product of the Department's Strategic Management System's process to make DOE more productive and accountable to the taxpayers.

Fiscal Year 2000 is the third year for which the Department has prepared a performance plan and the second performance plan required by the Government Performance and Results Act of 1993 ("Results Act"). The FY 2000 plan was developed using our experience gained from :

- developing and using Performance Agreements between the Secretary of Energy and the President since FY 1995,
- reporting the results of those Agreements and receiving "clean opinions" from our Inspector General for two consecutive years,
- developing the "Comprehensive National Energy Strategy" and "Accelerating Cleanup -- Paths to Closure" plan, and
- reviews by Congress and the General Accounting Office of our Results Act implementation.

Our Annual Performance Plan includes the results of our commitments for FY 1998, establishes our final performance goals for FY 1999, and proposes performance goals for FY 2000. These are organized to support the "business lines" established by the Department's Strategic Plan. Consistent organization and format of performance information clarifies the linkage of management documents from the Strategic Plan to the Annual Performance Plan, to the Secretary of Energy's Performance Agreement with the President, to the Department's annual report.

The budget and management of the operations at the Department of Energy are performance-based and follow the business line format outlined in the Department's Strategic Plan. This Performance Plan for FY 2000 identifies what the taxpayers will receive for the resources entrusted to the Department of Energy.

The Mission of the Department of Energy is:

To foster a secure and reliable energy system that is environmentally and economically sustainable, to be a responsible steward of the Nation's nuclear weapons, to clean up our own facilities, and to support continued United States leadership in science and technology.

To implement this mission, the resources requested for FY 2000 are:

$17.8 Billion and 16,219 Full Time Equivalent staff.

INTRODUCTION

Results for Resources

Our government is becoming more accountable to the taxpayers through implementation of the Government Performance and Results Act of 1993 (the "Results Act"). This law requires development of long range strategic plans, annual performance plans, and annual performance reports. This document is the second annual performance plan prepared to meet law's requirements of: (1) establishing performance goals that include the level of performance to be achieved written in an objective, quantifiable, and measurable form; (2) briefly describing the resources required to meet those performance goals; (3) describing how performance will be measured and compared with the goals; and (4) describing the how the Department will verify and validate the measured results. The President's Office of Management and Budget has issued guidance to agencies for preparing these plans but the format was up to the Departments.

A Clear Picture of Intended Performance

This Annual Performance Plan provides a clear picture of the Department's intended performance for FY 2000 by presenting fiscal year performance goals toward achieving the mission and goals of the Strategic Plan. The annual goals are improved, means and strategies for FY 2000 are more meaningful, and the links to the resources is simpler and clearer. To provide context, the plan includes the revised final measures and goals for FY 1999 and the status of the commitments in the Secretary's FY 1998 Performance Agreement with the President.

Consistency with the Strategic Plan and Linkage to the Budget

To ensure consistency with our Strategic Plan, this Annual Performance Plan begins with our mission as stated in the Strategic Plan and follows the Strategic Plan's structure. It describes performance measures and goals for each long term objective of the business lines and corporate management.

We have also made some structural adjustments to improve the linkage between our performance measures and goals and the resource requests. In order to show the links between this performance plan and the budget structure, a two-step process is necessary. First is a mapping from the "program activities" of the President's budget to our "decision units." Second is a matrix showing how each decision unit is supported by performance measures and goals. Both steps are presented as tables at the beginning of each business line discussion.

The following shows the relationship between the GPRA-specified contents and terminology of a strategic plan (SP) and annual performance plans (APP) and where they are found in either DOE's Strategic Plan, Annual Performance Plan, or both.

GPRA		**At DOE**
General Goals (SP)	↔	Business Line Goals (SP&APP)
General Objectives (SP)	↔	Business Line Objectives (SP&APP)
Strategies (SP)	↔	Long-term Strategies (SP&APP)
Performance Goals & Indicators (APP)	↔	Performance Measures & Goals; Commitments (APP)
Means & Strategies(APP)	↔	Means & Strategies (APP)

Organizational Adjustments

To improve linkage with the budget structure, we have presented performance measures and goals with their associated funding source as well as of showing them in the original Strategic Plan business line. This format allows us to be consistent with the budget, yet increase the focus on accountability. For example, the science and technology developmental work done by the Office of Energy Efficiency and Renewable Energy is described under the Energy Resources business line where it is funded, rather than in the Science and Technology business line. Similarly the electric utility restructuring and global climate change work being done by the Policy Office is described under Corporate Management because it is funded by the Departmental Administration account rather than with the Energy Resources business line. These adjustments did not affect a significant number of items and all items are indicated in both where they were found in the Strategic Plan, the FY 1998 Performance Agreement, and the FY 1999 Performance Plan, as well as where they are in this Annual Performance Plan for FY 2000.

Adjustments to the Strategic Plan

The Government Performance and Results Act of 1993 allows adjustments to the strategic plan through annual performance plans. In the year since the original strategic plan was published in September 1997, two significant strategic planning efforts have been completed. In April 1998, the Department published the *Comprehensive National Energy Strategy*, DOE/S-0124 (CNES). Its development included consultation with stakeholders through public meetings and public comments. The five "goals" of the resulting plan are different from the five "objectives" in the Strategic Plan's business line for Energy Resources. Work continues on implementing the CNES, however, for this version of the Annual Performance Plan, the Strategic Plan's original objectives are used because we have not fully implemented the CNES plan into our strategic plan.

The second significant strategic planning effort was the development of the environmental management plan, *Accelerating Cleanup: Paths to Closure*, DOE/EM-0362. The development of this plan also involved stakeholders and the public. The plan does not change the Strategic Plan but describes in more detail the costs, schedule, and strategies. It does, however, effect the budget structure for FY 2000 in that the work has been organized into 353 projects to cleanup the 53 remaining sites. *Accelerating Cleanup* is incorporated into this Plan.

During the development of the FY 2000 budget, improvements were made to the performance measures and goals of the Strategic Plan based on our experiences with the CNES, the *Accelerating Cleanup* plan, and our experience in developing the performance measures and goals of the FY 1999 Performance Plan. In addition, we have been evolving criteria for what performance measures should be included in the Department's performance plan based on our experience with the Performance Agreements between the Secretary and the President since FY 1995. We want performance measures and goals to be presidential, specific, quantified, meaningful, stretching, concise, written for taxpayers, covering, and auditable. These criteria are discussed on page104.

This annual performance plan contains the resultant set of measures & goals.

Management Challenges

Each year, in accordance with the Federal Managers' Financial Integrity Act of 1982 (FMFIA), the Department has been identifying for the President, Congress, and ultimately the public, areas of vulnerability in the operations of Government, and, as a consequence, ensuring that appropriate attention is given to ameliorating problems that may affect wise expenditure of the taxpayer's money. The FMFIA process identifies reportable problems and DOE's plans to address them. For FY 1999 and FY 2000, we are incorporating those commitments into the performance measures and goals for the Department based on the evaluation done for FY 1998. The ten management challenges are included in their associated business line or corporate management area and are identified as FMFIA items

The Year 2000 Problem

The steps the Department is taking to address this problem are part of the fifth Corporate Management objective on page 99.

Crosscutting Goals

The Department conducts continual dialogue and cooperation with other Federal and State agencies, and Native American nations, as well as U.S. industries and foreign governments. This cooperation frequently identifies crosscutting or common goals for the Department and the other organizations. In situations where our goals and objectives are accomplished through the work of others, we reduce or eliminate our efforts, thus avoiding duplication and saving taxpayer resources. Discussions of specific coordination for each objective are in the "means and strategies" section for the objective.

Consultation

In the development of the Department's Strategic Plan, alternative long-term strategies were considered. Through consultation with Congress, other agencies, and other stakeholder groups, many strategies were revised and improved, such that the strategies included in the final plan were those most likely to succeed. The projected available resources, financial, human, capital, and technological, were considered in developing the goals and objectives. The financial and human resources requested in the budget are identified in the Annual Performance Plan with each goal and objective. However, in accordance with OMB guidance, the annual performance plan, like the budget, contains pre-decisional information and was not released outside the Executive branch. Consultation with Congress is conducted through the Congressional review of the budget.

Following the submittal of the Performance Plan for FY 1999, several committee chairman wrote the Secretary providing their "grading" of the Department's

plan. Those comments were taken into consideration in developing this FY 2000 plan. The Department recognizes that the preparation of this annual performance plan is an inherently governmental function. As such, drafting of the plan was done only by Federal employees and no non-Federal parties made any significant contribution
.

Addressing Weaknesses in the FY 1999 Plan

The major weaknesses in the FY 1999 plan were the poor linking of the proposed performance with the budget requested, the lack of FY 1999-specific strategies to accomplish the annual goals, and the thin discussion of crosscutting goals. These areas have received special attention. Showing the connection from the budget to our performance goals has been improved by the addition of tables providing the linking the President's Program and Financing (P&F) accounts and program activities to DOE's decision units. We have retained the tables showing the relationship of DOE's decision units to the Strategic Plan's objectives and the Annual Performance Plan's performance measures and goals. We have also added a new section following the performance measures and goals addressing the FY 2000-specific means and strategies for accomplishing the proposed FY 2000 performance goals. Finally, how we are collaborating with other entities to accomplish joint performance goals is stated in the performance measures themselves or in the discussion of the means and strategies to accomplish them. Other improvements have been made throughout the document to address other noted weaknesses.

Organization of this Plan

This plan's organization is based on Strategic Plan and it addresses DOE's performance for three years. The Strategic Plan presented a single goal for each of four major business lines and one goal for corporate management. Each of these five goals were supported by objectives that are, in turn, supported by long-term strategies. While the goals and objectives chart a course for the next 5-10 years and the Strategic Plan's strategies were targeted for the next 3-5 years, this annual performance plan contains the performance measures and goals for the budget year, FY 2000. Performance measures and goals for the current year, FY 1999 and the status of results for the previous year, FY 1998, are provided for context.

The discussion of each business line begins with the goal for a business line, overview charts addressing the general goal, and tables linking the President's budget to the resources applied to the objectives of that business line. Next, each objective is presented followed by a listing of the long-term (strategic) strategies and three columns of performance information. The columns are by fiscal year: FY 1998, FY 1999, and FY 2000. In the columns are titles derived from the long-term strategies followed by the associated performance measures and goals. Each measure is annotated with the responsible DOE office in parentheses. A list of the office abbreviations is provided on page 105.

The FY 1998 results are described using status codes. The status codes are:

"FULLY SUCCESSFUL" for results evaluated as meeting or exceeding the target;
"SUCCESSFUL" for results effectively 80-100 percent of the target;
"PARTIALLY SUCCESSFUL" is used for results effectively in the range of 50-80 percent of target;
and "UNSUCCESSFUL" was used for results effectively less than 50 percent of the target.

Where performance was less than SUCCESSFUL, a brief explanation is provided. The full discussion of the FY 1998 results will be found in the Department's Accountability Report to be published March 1, 1999.

Following the columns is a discussion of the means and strategies that DOE will use to achieve the FY 2000 performance goals. This discussion includes any significant overlap with other organization's performance goals, i.e., other government agencies involved in achieving the specified goals.

It should also be noted that this performance plan is only an overview. The comprehensive set of performance measures and performance goals are set forth in the Department's full performance-based budget.

Finally, performance planning is still evolving at the Department of Energy. Each cycle the Department becomes more effective in designing and refining performance measures and goals that are used to manage operations at the Department of Energy.

The following table presents the business line goal statements and requested resources for FY 2000.

Business Line Goals	**FY 2000 Budget** (in millions)	**Request** (in FTE)
Energy Resources: The Department of Energy and its partners promote secure, competitive, and environmentally responsible energy systems that serve the needs of the public. (FE, EE, NE, PMAs, EIA, & FERC)	$ 2,095	7,575
National Security: Support national security, promote international nuclear safety, and reduce the global danger from weapons of mass destruction. (DP, NN, IN, CN, MD, WT, NR)	$ 6,228	2,508
Environmental Quality: Aggressively clean up the environmental legacy of nuclear weapons and civilian nuclear research and development programs, minimize future waste generation, safely manage nuclear materials, and permanently dispose of the Nation's radioactive wastes. (EM, RW, & EH)	$ 6,452	3,232
Science and Technology: Deliver the scientific understanding and technological innovations that are critical to the success of DOE's mission and the Nation's science base. (SC)	$ 2,844	424
Corporate Management: The Department of Energy continuously demonstrates organizational excellence in its environment, safety and health practices, communication and trust efforts, and its corporate management systems and approaches. (All programs participate in the Corporate Management area. The funds and FTEs shown for Corporate Management are those of the Departmental Administration account with FERC receipts.) (CFO, CI, GC, ED, FM, GC, HG, MA, IG, PA, PO, PC, & S1)	$ 223	2,480
Totals:	**$17,842**	**16,219**

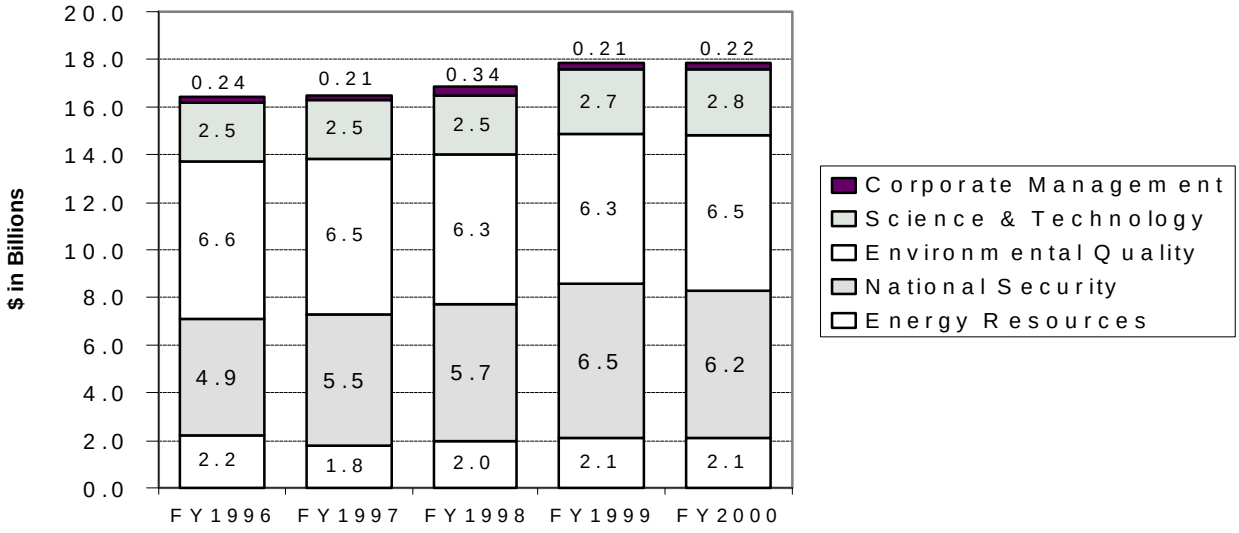

Figure 1: Department of Energy Budget Requests by Business Line

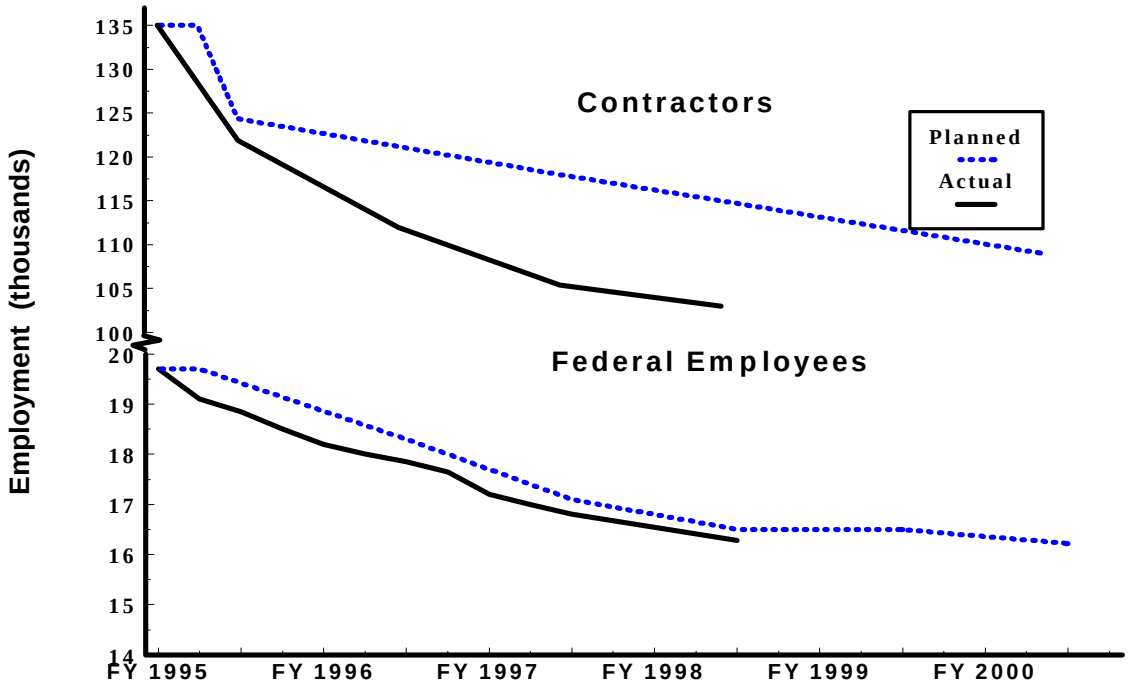

Figure 2: DOE's Human Resources (includes PMAs and FERC)

ENERGY RESOURCES

GOAL: The Department of Energy and its partners promote secure, competitive, and environmentally responsible energy systems that serve the needs of the public.

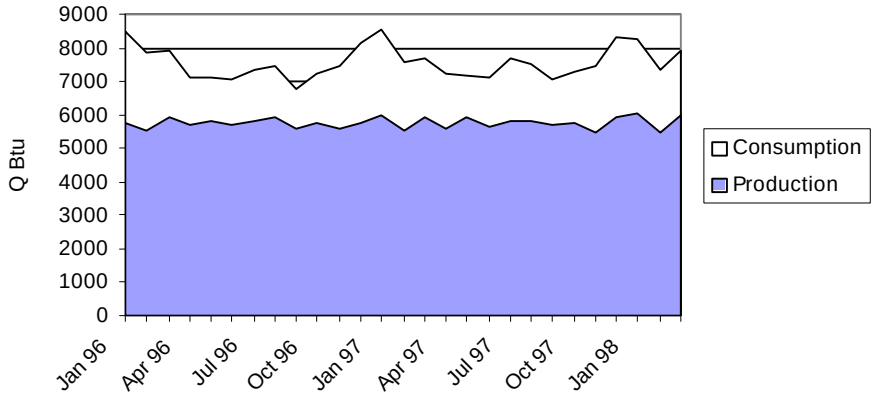

Figure 3: Energy Production & Consumption

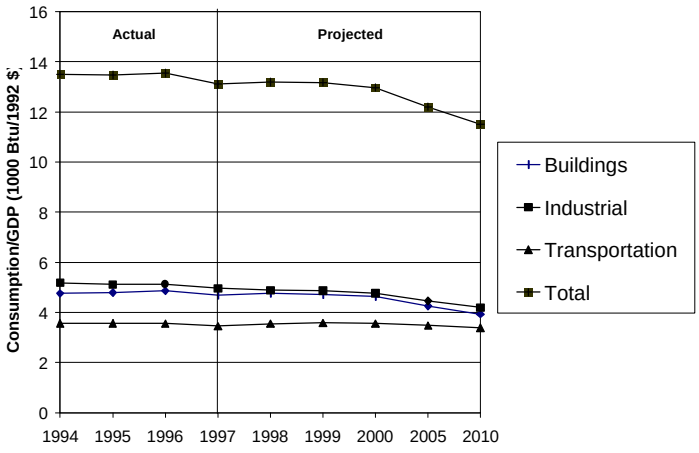

Figure 4: The Costs of Energy by Sector

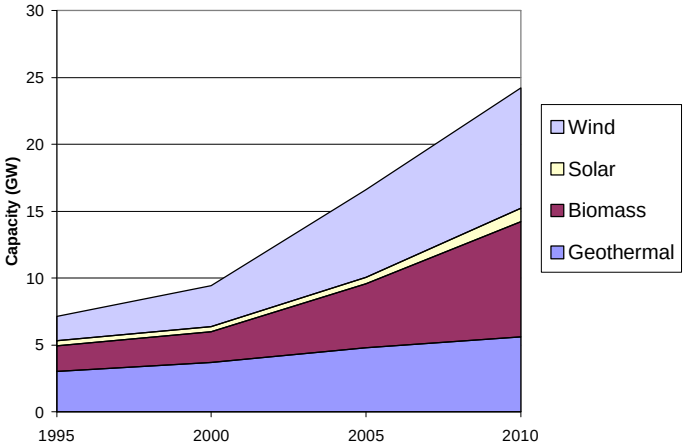

Figure 5: Renewable Energy Capacity

The following table maps the Presidential Budget's Program and Financing (P&F) accounts and program activities to the Department of Energy's offices and decision units. The alignment includes aggregation, disaggregation, and consolidation. The table that follows this one maps DOE decision units to the business line objectives where performance measures and goals are identified.

Presidential Budget Program and Financing (P&F) Accounts and Program Activities	***FY 2000 Budget Request ($M)***	***DOE Office***	***DOE Decision Units***
270 Energy Supply			
Solar and renewable energy	$399	EE	Solar & Renewable Energy
Nuclear research & development	$269	NE	Nuclear Energy
Fossil Energy Research and Development	$375	FE	Fossil Energy Programs
Naval Petroleum and Oil Shale Reserves	$0	FE	Naval Petroleum & Oil Reserves
Energy Conservation			
Building technology, State and community programs--non-grant	$145	EE	Building technology, State and community programs--non-grant
Building technology, State and community programs--grant	$191	EE	Building technology, State and community programs--grant
Federal energy management program	$32	EE	Federal Energy Management Program
Industrial sector	$171	EE	Industrial Sector
Transportation sector	$252	EE	Transportation Sector
Policy and management	$47	EE	Policy and management
Strategic Petroleum Reserve	$159	FE	SPR Facilities Development
SPR Petroleum Account	$5	FE	SPR Petroleum Account
Energy Information Administration	$73	EIA	Energy Information Administration
Clean Coal Technology	--$246	FE	Clean Coal Technology
Elk Hills School Lands Fund	$36	FE	Elk Hills School Lands Fund
Power Marketing Administrations	$319	PMA	Power Marketing Administrations
Departmental Administration [1]	$21	PO	Policy and International Affairs

[1] Only a portion of Departmental Administration resources are applied to the Energy Resources Business Line.

The following table indicates which budget program/decision units support which of the business line objectives. Resources, in both funds and Full Time Equivalent staff (FTEs), are shown. FTE estimates are for the overall program offices. The funds shown are program totals from DOE's budget request.

DOE Office	**DOE Program/ Decision Units**	FY 2000 Budget Request ($M)	FTEs	ER-1 Energy Security	ER-2 Competitive Industry	ER-3 Efficiency & Productivity	ER-4 Global Markets	ER-5 Informed Policy
EE	Solar & Renewable Energy	$399	526	X	X	X	X	X
	Transportation Sector	$252		X		X	X	
	Industry Sector	$171			X	X	X	
	Federal Energy Management Program	$32			X	X		
	Building technology, State and community programs--non-grant	$145			X	X	X	
	Building technology, State and community programs--grant	$191				X		
	Policy and Management	$47		X	X	X	X	X
FE	Fossil Energy Programs	$364	905	X	X		X	X
	Clean Coal Tech.	--$246		X	X		X	
	Naval Petroleum & Oil Reserves	$0		X				
	SPR Facilities Development	$164		X				
	Elk Hills School Lands Fund	$36		X				
NE	Nuclear Energy	$269	144		X			
PMA	Power Marketing Administrations	$200	4,309	X				
HG	Hearings and Appeals	$6	46		X			
EIA	Energy Information Administration	$73	371					X
PO	Office of Policy and International Affairs[2]	$21	120	X	X		X	

[2] Only a portion of the Policy Office's resources are applied to the Energy Resources Business Line.

ER-1 Reduce the vulnerability of the U.S. economy to disruptions in energy supplies. (FE, EE, PMAs)

Long-term Strategies: Over the next several years, the Department will (1) support research and development, policies, and improved regulatory practices capable of ending the decline in domestic oil production before 2005; (2) maintain an effective Strategic Petroleum Reserve (SPR) to deter and respond to oil supply disruptions, and act cooperatively with member nations of the International Energy Agency; (3) diversify the international supply of oil and gas; (4) develop alternative transportation fuels and more efficient vehicles that can reduce year 2010 projected oil (crude plus refined products) imports of 12 million barrels per day by 10 percent; (5) maximize the productivity of Federal oil fields, consistent with Congressional legislation; and (6) take measures to avoid, but when needed, respond to domestic energy disruptions.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals (Initial)
ER1-1 BOOSTING THE NATION'S PRODUCTION OF DOMESTIC OIL ! *Demonstrating advanced production enhancement technologies for shallow-shelf carbonate reservoirs, adding 27 million barrels of reserves. (FE)* (FULLY SUCCESSFUL)[3] ! *Developing and transferring to industry six new technologies to characterize the heterogeneity in naturally fractured reservoirs. (FE)* (FULLY SUCCESSFUL) ! *Completing work in four States, giving them the capability to establish variances for oil and gas injection wells in areas of low environmental risk, and implementing risk-based data management systems for improved regulatory decision- making in ten States, towards overall program objective of reducing cumulative industry compliance costs by $16 billion by 2010. (FE)* (FULLY SUCCESSFUL)	**ER1-1 BOOSTING THE NATION'S PRODUCTION OF DOMESTIC OIL** ! *Demonstrate four advanced production enhancement technologies that could ultimately add 190 million barrels of domestic reserves, including 30 million barrels during FY 1999. (FE)* ! *Complete an online environmental compliance expert system, developed in cooperation with States, that will improve oil and gas production economics by giving producers on-line access to Federal and State rules and regulations and allowing them to conduct environmental permitting and reporting over the Internet, reducing time and costs related to environmental compliance. (FE)*	**ER1-1 BOOSTING THE NATION'S PRODUCTION OF DOMESTIC OIL** ! *Completing demonstration and transfer of seven advanced secondary and tertiary technologies, adding 92 million barrels of reserves, increasing the number of economic wells and reducing abandonment rates. (FE)* ! *Completing field testing and monitoring of two technologies for downhole separation for oil and water, resulting in reduction in produced water and potential increase in oil production per well. (FE)*

[3] End-of-year results of FY 1998 Performance Agreement commitments are classified as "FULLY SUCCESSFUL", "SUCCESSFUL", "PARTIALLY SUCCESSFUL", or "UNSUCCESSFUL" for performance judged to be effectively 100% or better, 80-100%, 50-80%, or less than 50% respectively.

ER-1 Reduce the vulnerability of the U.S. economy to disruptions in energy supplies. (FE, EE, PMAs) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER1-2 MAINTAINING AN EFFECTIVE STRATEGIC PETROLEUM RESERVE ! *Degassing 11 million barrels of additional oil inventory to complete the degasification effort at a total of 169 million barrels, thus increasing oil availability for drawdown to the total SPR inventory amount. (FE)* (FULLY SUCCESSFUL) ! *Performing an annual assessment of commercial systems' capability to distribute SPR crude into the marketplace, defined as 120 percent of SPR drawdown rate capability. (FE)* (FULLY SUCCESSFUL) ! *Initiating an additional 17 percent of the infrastructure life extension program to maintain SPR systems' reliability, bringing implementation to 93 percent. (FE)* (FULLY SUCCESSFUL) **ER1-3 DIVERSIFYING THE INTERNATIONAL SUPPLY OF OIL AND GAS** ! *Continuing DOE leadership in international energy initiatives that are instrumental in developing, through government-to-government efforts, an effective legal and regulatory framework for private sector energy investment and policies to encourage development of a broad portfolio of fuel supplies. (PO)* (FULLY SUCCESSFUL)	**ER1-2 MAINTAINING AN EFFECTIVE STRATEGIC PETROLEUM RESERVE** ! *Initiate additional SPR infrastructure Life Extension Program projects, thereby bringing program implementation to approximately 96 percent of the $328 million program. Program completion in FY 2000 will increase sustained drawdown capability to 4.1 million barrels per day compared to 3.7 in FY 1997. (FE)* **ER1-3 DIVERSIFYING THE INTERNATIONAL SUPPLY OF OIL AND GAS** ! *Continue DOE leadership in international energy initiatives that are instrumental in developing, through government-to- government efforts, an effective legal and regulatory framework for private sector energy investment and policies to encourage development of a broad portfolio of fuel supplies. (PO)*	**ER1-2 MAINTAINING AN EFFECTIVE STRATEGIC PETROLEUM RESERVE** ! *Complete the Life Extension Program to ensure the long-term reliability, effectiveness, and operational readiness of SPR facilities and systems.(FE)* ! *Ensuring achievement of a calculated site availability of 95% or greater with drawdown capability of 4.1 million barrels per day for a sustained 90 day period within 15 days notice by the President. (FE)* **ER1-3 DIVERSIFYING THE INTERNATIONAL SUPPLY OF OIL AND GAS** ! *Continue DOE leadership in international energy initiatives that are instrumental in developing, through government-to- government efforts, an effective legal and regulatory framework for private sector energy investment and policies to encourage development of a broad portfolio of fuel supplies. (PO)*

ER-1 Reduce the vulnerability of the U.S. economy to disruptions in energy supplies. (FE, EE, PMAs) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER1-4 DEVELOPING ALTERNATIVE TRANSPORTATION FUELS AND MORE EFFICIENT VEHICLES ! *Developing technologies to convert fossil and waste fuels to high quality transportation fuels at costs of $20-$25 per barrel. Specifically, (FE/EE)* - *developing a conceptual process design for oxygen separation using a new type of ceramic membrane to advance Fischer-Tropsch technology for conversion of remote low-valued natural gas to high quality alternate liquid transportation fuels, and* - *initiating development of catalysts for coproducing chemical feedstocks and premium, ultra low emission diesel fuels from solid carbonaceous feedstocks.* (SUCCESSFUL) ! *Expanding the Clean Cities program to more than 65 participating communities. (EE)* (SUCCESSFUL) ! *Completing the design of a 10 million gallons of ethanol per year first-of-a-kind refinery for producing ethanol from agricultural crop waste. (EE)* (SUCCESSFUL) ! *Completing initial performance specifications for the high efficiency diesel to replace current low efficiency engines in class 1 and 2 trucks. (EE)* (SUCCESSFUL) ! *Maintaining our 600+ existing Climate Challenge partnership agreements supporting integration of energy efficiency and renewable energy technologies into our partner's Carbon abatement programs. (EE)* <moved from ER4-1> (FULLY SUCCESSFUL)	**ER1-4 DEVELOPING ALTERNATIVE TRANSPORTATION FUELS AND MORE EFFICIENT VEHICLES** ! *Support an industrial partner to complete site preparation and begin construction of industry-owned facility to demonstrate first-of-a-kind cellulosic biomass to ethanol technology from agricultural crop waste. (EE)* ! *Build a single cylinder proof-of-concept diesel engine that delivers up to 55 percent efficiency. (EE)* ! *Expand the Clean Cities program to create continuous corridors of alternative transportation fuel availability in and between 10 major urban centers. (EE)* <moved from ER3>	**ER1-4 DEVELOPING ALTERNATIVE TRANSPORTATION FUELS AND MORE EFFICIENT VEHICLES** ! *Demonstrate conversion of agricultural wastes to ethanol at a small commercial scale using a genetically engineered fermentative microorganism (EE)* ! *Complete testing of baseline prototype, 50-volt high power lithium-ion modules for use in hybrid vehicles.(EE)* ! *Launch two projects that will lead to 100 percent penetration of alternative fuel vehicles in selected niche applications such as a local taxi fleet or the busses for a particular school. (EE)*

ER-1 Reduce the vulnerability of the U.S. economy to disruptions in energy supplies. (FE, EE, PMAs) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER1-5 MAXIMIZING THE PRODUCTIVITY OF FEDERAL OIL FIELDS ! *Carrying out the sale of the Elk Hills oil field at maximum market value by February 1998. (FE)* (FULLY SUCCESSFUL)	**ER1-5 MAXIMIZING THE PRODUCTIVITY OF FEDERAL OIL FIELDS** ! ~~*Complete negotiations with Chevron USA on equity shares of Elk Hills. (FE)*~~ [4]	**ER1-5** [Combined with ER1-4]
ER1-6 TAKING MEASURES TO AVOID DOMESTIC ENERGY DISRUPTIONS ! *Ensuring that each power system control area operated by a Power Marketing Administration receives, for each month of the fiscal year, a Control Compliance Rating of "Pass" using the North American Electric Reliability Council performance standard. (PMAs)* (FULLY SUCCESSFUL) ! *Completing the development of a modeling capability and performing analyses to guide the design of legislative options regarding reliability under electric utility restructuring. (PO)* (SUCCESSFUL)	**ER1-6 TAKING MEASURES TO AVOID DOMESTIC ENERGY DISRUPTIONS** ! *Ensure that each power system control area operated by a Power Marketing Administration (PMA) receives, for each month of the fiscal year, a Control Compliance Rating of "Pass" using the North America Electric Reliability Council performance standard. (PMAs)* ! *Work with industry organizations and government agencies to establish a comprehensive process to assess Y2K readiness status, promote intersectoral coordination, and provide contingency plans. Provide for timely communication to the public of information regarding readiness status and contingency planning activities. (PO)* [5] ! *Work with industry organizations and government agencies, including the National Petroleum Council, to assess the impact of changing market conditions and regulations on the level and variability of petroleum prices and supply, and provide recommendations to minimize disruptions during change. (PO)*	**ER1-6 TAKING MEASURES TO AVOID DOMESTIC ENERGY DISRUPTIONS** ! *Ensure that each power system control area operated by a Power Marketing Administration (PMA) receives, for each month of the fiscal year, a Control Compliance Rating of "Pass" using the North America Electric Reliability Council performance standard. (PMAs)* ! *Meet the repayment plan for the principal on the Power Investment for each PMA. (PMAs)* ! *Achieve a safety performance of a 3.3 recordable accident frequency rate for recordable injuries per 200,000 hours worked or the Bureau of Labor Statistics' industry rate, whichever is lower. (PMAs)* ! *Work with industry organizations and government agencies, including the National Petroleum Council, to assess the impact of changing market conditions and regulations on the level and variability of petroleum prices and supply, and provide recommendations to minimize disruptions during change. (PO)*

Means & Strategies for FY 2000: With the Life Extension program wrapping up in FY 2000, DOE will focus the Strategic Petroleum Reserve (SPR) efforts on maintaining operational readiness of SPR facilities within 15 days of notice by the President to drawdown oil at set performance levels. Oil supply activities will include increased technology transfer to

[4] There have been a number of new events not under DOE control that have occurred since this measure was developed, which have combined to a considerable delay in the final decision until as late as mid-FY 2002 based primarily on requests from Chevron.

[5] A new responsibility assigned to the Department of Energy and the Policy Office for FY 1999.

help meet the CNES strategy: "By 2005, stop the decline in domestic oil production." The Naval Petroleum and Oil Shale Reserves will continue efforts to achieve maximum value from existing properties." The Department will improve the efficiency of vehicles through joint R&D with automobile manufacturers, demonstrate cost competitive technologies for the production of liquid transportation fuels through partnerships with biofuel manufacturers, and encourage the adoption of alternative fuel vehicles and supporting infrastructures through partnerships with local government organizations.

To meet their repayment target, the PMAs will emphasize: (a) managing costs and FTE; (b) risk management; (c) enhancing revenues (e.g.., BPA's renewal of power sales contracts through 2001 with existing wholesale customers); and (d) effectively operate in the increasingly competitive marketplace.

To meet their safety target the PMAs will emphasize: (a) continuing to provide training for managers, supervisors and staff; (b) tracking and reviewing injury/illness history to mitigate further occurrences; (c) continuing to monitor safety compliance; and (d) emphasizing the role of management in safety.

To meet their reliability target the PMAs will emphasize: (a) being Y2K-ready; (b) leadership roles in adoption of mandatory reliability requirements; (c) improved operations (e.g., reliability-centered maintenance, adopting quality assurance approaches); and (d) improved contingency planning (e.g., outage coordination, remedial action schemes).

ER-2 Ensure that a competitive electricity generation industry is in place that can deliver adequate and affordable supplies with reduced environmental impact. (FE, EE, NE)

Long-term Strategies: Over the next several years, the Department will (1) propose legislation and support administrative actions to promote establishment of a more open, competitive electric system, with improved environmental performance; (2) support R&D policies and improved regulatory practices that can increase domestic natural gas supplies, moderate future price increases, and fuel 25 percent of the anticipated 6 trillion cubic feet (TCF) increase in natural gas demand (of which 3.5 TCF is for electricity generation) through 2010; (3) develop renewable energy technologies and supporting policies capable of doubling non-hydroelectric renewable energy generating capacity by 2010; (4) by 2010, significantly reduce emissions from currently existing fossil fuel powerplants; (5) by 2010, integrate advanced turbine and fuel cell technology to achieve market-ready gas-fueled powerplants with efficiencies over 70 percent and significantly reduced NOx compared to conventional plants; (6) by 2010, reduce coal powerplant emissions by achieving market-ready coal power systems with efficiencies over 60 percent (new plants are currently about 35 percent), emission reductions less than 1/10 of New Source Performance Standards (NSPS), and CO_2 emissions 45 percent below conventional plants'; (7) improve nuclear power plant reliability and availability to increase the capacity factor of existing nuclear power plants from the 1996 average of 76 percent to 85 percent by 2010; (8) maintain a viable nuclear option for future, carbon-free baseload electricity through cooperative programs with the U.S. electric utility industry, national laboratories, and universities that would maintain domestic nuclear capabilities and would result in a U.S. order of an advanced nuclear power plant before 2010 (See EQ-5 for nuclear waste issues); and (9) develop and introduce advanced turbines for cogeneration that can reduce annual industrial energy costs by $500 million and carbon emissions by nearly 1.7 million metric tons in 2010.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER2-1 ESTABLISHING A MORE OPEN, COMPETITIVE ELECTRIC SYSTEM ! *Completing the development of a modeling capability and performing analyses to guide the design of legislative options regarding electric industry competitiveness, environmental performance, and affordable customer service. (PO)* (FULLY SUCCESSFUL) **ER2-2 BOOSTING THE NATION'S PRODUCTION OF NATURAL GAS** ! *Demonstrating 3 advanced drilling and well completion technology systems that could contribute an additional 6 TCF to domestic gas reserves. (FE)* (FULLY SUCCESSFUL) ! *Conducting feasibility studies and developing conceptual designs for alternative storage technologies for the power generation markets in the Northeast and South Atlantic regions. (FE)* (SUCCESSFUL)	**ER2-1 ESTABLISHING A MORE OPEN, COMPETITIVE ELECTRIC SYSTEM** ! *Issue a revised Administration proposal on electric utility restructuring and the supporting economic analysis to provide a catalyst for consensus and action. (PO)* ! *Enhance electricity sector modeling capabilities by benchmarking the representation of transmission system constraints against models of physical power flows to better address electric reliability and economic issues, and use this enhanced modeling capability in support of the legislative process. (PO)* **ER2-2 BOOSTING THE NATION'S PRODUCTION OF NATURAL GAS** ! *Complete development of one Advanced Drilling, Completion & Simulation technology system that could contribute to an additional 6 TCF of domestic gas reserves by 2010. (FE)*	**ER2-2 BOOSTING THE NATION'S PRODUCTION OF NATURAL GAS** ! *Demonstrate a cost effective horizontal well and advanced exploration and stimulation technologies in low permeability natural gas formations for increasing recovery of the 5,000+ TCF resource in the Greater Green River and Wind River Basins. (FE)*

ER-2 Ensure that a competitive electricity generation industry is in place that can deliver adequate and affordable supplies with reduced environmental impact. (FE, EE, NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER2-3 DEVELOPING RENEWABLE DOMESTIC ENERGY ! *Initiating the government, industry, and state partnership to put solar panels on one million roofs. (EE)* (FULLY SUCCESSFUL) ! *Achieving retail sales by U.S. industry of 8 percent efficient cadmium telluride large area photovoltaic modules. (EE)* (FULLY SUCCESSFUL) ! *Completing 100-hour acceptance test for Solar Two power tower in California, achieving 90% system availability and producing 1,500 MW-hours of electricity for a one-month period. (EE)* (SUCCESSFUL) ! *Completing gas analysis and operational testing of the Vermont biomass gasifier. (EE)* (PARTIALLY SUCCESSFUL: Testing was not completed.) ! *Beginning construction of multi-megawatt geothermal demonstration power plant based on advanced heat recuperation technology. (EE)* (PARTIALLY SUCCESSFUL: Evaluating comments from draft Environmental Assessment causing delay.) ! *Completing requirements for International Standards Organization accreditation for wind turbine certification testing at the National Wind Technology Center. (EE)* (FULLY SUCCESSFUL)	**ER2-3 DEVELOPING RENEWABLE DOMESTIC ENERGY** ! *Support the Million Solar Roofs Initiative by installing 15,000 energy systems. (EE)* ! *Develop codes, standards and safety specifications for residential PV roof systems. (EE)* ! *Accumulate 750 hours of reliable operation for a distributed concentrating solar power system. (EE)* ! *Complete design of power plant modifications for co-firing of biomass with coal. (EE)* ! *Establish a United States based commercial firm as an internationally recognized certification agent using testing and design review services provided by the National Wind Technology Center. (EE)*	**ER2-3 DEVELOPING RENEWABLE DOMESTIC ENERGY** ! *Facilitate the installation of 26,000 solar energy systems in support of the Million Solar Roofs Initiative, bringing the total number of installed systems to 51,000 . (EE)* ! *Develop a 13 percent efficient stable prototype thin-film photo-voltaic module. (EE)* ! *Complete solar Two Power Tower project, demonstrating the dispatchability of solar power during periods of peak demand. (EE)* ! *Complete three projects which will be co-firing with biomass on a regular basis. (EE)* ! *Complete construction of a 5MW Kalina Cycle (advanced heat recuperation technology) demonstration geothermal power plant. (EE)* ! *Install three prototypes for field testing under the Small Wind Turbine Project. (EE)*

ER-2 Ensure that a competitive electricity generation industry is in place that can deliver adequate and affordable supplies with reduced environmental impact. (FE, EE, NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
! *Increasing the routine use of renewable energy technologies at Federal facilities through the completion of one government-wide solar technology Super-Energy Savings Performance Contract (Super ESPC);assisting ten sites in assessing renewable potential; and, completing two model delivery orders integrating cost-effective solar technology and energy efficiency. (EE)* (FULLY SUCCESSFUL)	! *Complete three nationwide solar technology Super-ESPCs for use by all agencies. (EE)*	! *Complete three additional nationwide technology Super-ESPCs for us be all agencies, bringing the total number of technology Super-ESPCs to nine. (EE)*
ER2-4 REDUCING EMISSIONS FROM EXISTING FOSSIL FUEL POWER PLANTS AND DEVELOPING CLEAN HIGH EFFICIENCY FOSSIL FUELED POWER PLANT FOR THE 21ST CENTURY	**ER2-4 REDUCING EMISSIONS FROM EXISTING FOSSIL FUEL POWER PLANTS AND DEVELOPING CLEAN HIGH EFFICIENCY FOSSIL FUELED POWER PLANT FOR THE 21ST CENTURY**	**ER2-4 REDUCING EMISSIONS FROM EXISTING FOSSIL FUEL POWER PLANTS AND DEVELOPING CLEAN HIGH EFFICIENCY FOSSIL FUELED POWER PLANT FOR THE 21ST CENTURY**
! *Completing milestones, including initiation of gasification testing and completion of the pressurized fluidized bed combustion (PFBC) test module, at the Wilsonville, AL, Power Systems Development Facility, leading to development of advanced integrated gasification combined cycle (IGCC)and PFBC systems with efficiencies over 60 percent, 30-50 percent lower CO2 emissions, and up to 20 percent lower electricity costs. (FE)* (SUCCESSFUL)	! *Complete testing of the first commercial-sized fuel cell module (100 KWe) using high temperature solid oxide technology suitable for advanced high-efficiency electrical generation cycles. (FE)* ! *Complete full-scale component testing of two advanced, utility-scale turbines with over 60 percent efficiency when used in combined cycles (new plants are currently about 55 percent) and with ultra-low NOx emissions. Initiate advanced gas turbine full speed, no load testing with one gas turbine manufacturer.(FE)*	! *Begin testing of first market prototype solid oxide fuel cell an commercial sites for distributed power applications. (FE)* ! *Complete validation testing for critical components of advanced utility-scale turbines with over 60 percent efficiency (combined cycles mode) and ultra-low NOx emissions. Initiate advanced gas turbine full speed, no load testing with the second gas turbine manufacturer, which is the last step before demonstration. (FE)* ! *In support of Vision 21, deliver a 1-MW fuel cell/turbine hybrid powerplant to verify market entry design. (FE)*

ER-2 Ensure that a competitive electricity generation industry is in place that can deliver adequate and affordable supplies with reduced environmental impact. (FE, EE, NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
! *Continuing accomplishments in the Clean Coal Technology Demonstration Program, including:* S *Initiating the design of one commercial-scale Circulating Atmospheric Fluidized Bed Combustion Project (Jacksonville) and one Advanced Circulating Pressurized Fluidized Bed Project (Lakeland) capable of achieving SO_2 reductions of at least 95 percent and NOx reductions of at least 80 percent.* S *Commencing construction of a Coal-fired Diesel Engine Project for small utility and industrial applications.* S *Completing operations of a processing facility producing a coal product fuel with a sulfur content as low as 0.3 percent and heating value up to 12,000 BTU/lb.* S *Commencing operations of commercial-scale, advanced combustor facility (Healy) for electrical power generation with reductions greater than 70 and 90 percent, respectively, for NOx and SO_2.* (SUCCESSFUL)	! *Complete commercial demonstration of one integrated gasification combined cycle project (Wabash) and continue operations of two other gasification projects in order to establish the engineering foundation leading to new generation of 60 percent efficient, ultraclean, coal powerplants. (FE)* ! *Complete review of proposals for the second round in FY 1999, and initiate projects to design and develop advanced catalysts, electrodes, and membranes, as well as advanced separator plates and high temperature sealants under the Russian-American Fuel Cell Consortium. (PO)*	! *Complete demonstration of the third integrated gasification combined cycle project (Pinion Pine) utilizing air-blown gasification and hot gas cleanup for improved thermal efficiency, and continue operations of one other project (Polk) in order to establish the engineering foundation leading to new generation of 60 percent efficient powerplants. (FE)*

ER-2 Ensure that a competitive electricity generation industry is in place that can deliver adequate and affordable supplies with reduced environmental impact. (FE, EE, NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
! *Completing the scheduled test runs of the first complete natural gas fueled solid oxide fuel cell power plant, and continuing the product improvement and cost reduction of molten carbonate fuel cell power plants leading to 60 percent efficient systems that will be market-ready in the year 2002 time frame and capable of achieving competitive costs in distributed power generation. (FE)* (FULLY SUCCESSFUL) ! *Completing Phase III Advanced Turbine System technology readiness testing for utility-scale turbines, and initiating prototype tests of a 60 percent efficient, ultra-low NOx emissions advanced gas turbine system for market applications in the year 2000 time frame. (FE)* (SUCCESSFUL)		
ER2-5&6 [Combined with ER2-4]	**ER2-5&6** [Combined with ER2-4]	**ER2-5&6** [Combined with ER2-4]

ER-2 Ensure that a competitive electricity generation industry is in place that can deliver adequate and affordable supplies with reduced environmental impact. (FE, EE, NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER2-7 IMPROVING EXISTING NUCLEAR POWER PLANTS AND MAINTAINING NUCLEAR POWER AS A VIABLE OPTION FOR THE FUTURE ! *Working with industry to facilitate NRC final design approval of the Westinghouse AP600 design by September 1998 for passively safe nuclear reactors. (NE)* (FULLY SUCCESSFUL) **ER2-8** [Combined with ER2-7]	**ER2-7 IMPROVING EXISTING NUCLEAR POWER PLANTS** ! *Complete Memorandums of Understanding with the Nuclear Regulatory Commission and the Electric Power Research Institute (EPRI) to guide future implementation of the Joint DOE-EPRI Strategic Research and Development Plan to Optimize U.S. Nuclear Power Plants. (NE)* **ER2-8 MAINTAINING NUCLEAR POWER AS A VIABLE OPTION FOR THE FUTURE** ! *Establish a peer-reviewed Nuclear Energy Research Initiative, initially funded at $19 million to select and conduct investigator-initiated innovative scientific and engineering research that will address the issues facing the future of nuclear power in the U.S., including proliferation concerns, economics, and the management of nuclear waste. (NE)*	**ER2-7 IMPROVING EXISTING NUCLEAR POWER PLANTS** ! *Implement a cooperative R&D program to address technical questions that could prevent continued operation of current nuclear power plants by working with industry, universities, and national laboratories. (NE)* **ER2-8 MAINTAINING NUCLEAR POWER AS A VIABLE OPTION FOR THE FUTURE** ! *Improve the understanding of reactor systems, component technology and nuclear fuel performance so one or more new reactor and one or more new fuel cycle concepts are identified which offer improved proliferation resistance, and the prospects of improved performance and efficiency, lower costs, and enhanced safety. (NE)* ! *Identify one or more proliferation resistant reactor concepts for low power and/or modular design applications. (NE)* ! *Advance the state of scientific knowledge and technology to enable incorporation of improved proliferation resistance in the design, development, and deployment of new reactor and nuclear fuel systems. (NE)*

ER-2 Ensure that a competitive electricity generation industry is in place that can deliver adequate and affordable supplies with reduced environmental impact. (FE, EE, NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER2-9 DEVELOPING ADVANCED TURBINES FOR COGENERATION ! *Field testing of ceramic components for an advanced industrial turbine for 4,000 hours. (EE)* (SUCCESSFUL)	**ER2-9 DEVELOPING ADVANCED TURBINES FOR COGENERATION** ! *Initiate the 8,000 hour test of the gas turbine engine for the Advanced Turbine System for use in industrial cogeneration. (EE)*	**ER2-9 DEVELOPING ADVANCED TURBINES FOR COGENERATION** ! *Demonstrate an advanced industrial turbine system engine at one or more sites. (EE)*

Means & Strategies for FY 2000: The Department will focus more attention on recovery from gas resources that can help fuel anticipated large increases in domestic consumption beyond 2010. Increased effort will be given to integrating advanced gas and coal-fueled power technologies into “Vision 21" plants that can enhance environmental and economic performance. The Department will also conduct investigator-initiated, peer-reviewed research and development at universities, national laboratories, and industrial organizations to advance the scientific knowledge base and develop new technologies that will address the principal obstacles to the future use of nuclear energy, and advance the state of nuclear technology for a competitive marketplace. The Department will also conduct government-industry cost-shared, peer-reviewed, research and development to address the issues associated with long- term operation of existing nuclear power plants and to apply new technology to improve plant reliability and availability. This later program will be conducted consistent with the updated Joint DOE-EPRI Strategic Research and Development Plan to Optimize U.S. Nuclear Power Plants to be issued in FY 1999. The Department and NRC have coordinated program planning to assure that their research and development activities are complimentary, cost-effective, and without duplication. The Nuclear Energy Research Advisory Committee (NERAC) will provide the Department advice on the conduct of these research programs with a specific subcommittee on Operating Nuclear Power Plan Research, Coordination, and Planning to provide advice and prioritize the research theat the Department will conduct with industry under the NEPO program. The Department will collaborate with national laboratories, industry and universities on research and development that improves the performance and reduces the cost of renewable energy technologies, and foster market penetration of solar technologies through the Million Solar Roofs Initiative and Super-ESPCs.

ER-3 Reduce the energy-related environmental impacts through more efficient energy use. (EE)

Long-term Strategies: Over the next several years, the Department will (1) develop and deploy vehicles, fuels, and systems of the future, contributing significantly to the Partnership for a New Generation of Vehicles (PNGV) to develop, by 2004, prototype mid-sized cars capable of 80 miles per gallon that will reduce NOx and CO_2 emissions by two-thirds compared to today's new car average without compromising safety, comfort, and cost; (2) by 2010, limit energy related releases of CO_2, SOx, NOx, particulates, and other wastes by as much as 5 percent relative to projected emissions by supporting R&D to improve efficiency of the Nation's energy intensive industries; and (3) by 2010, improve the energy efficiency of the existing U.S. building stock, and increase the energy efficiency of new homes by 30 percent and other new buildings by 20 percent compared to 1996 average new buildings.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER3-1 DESIGNING AND DELIVERING THE VEHICLES OF THE FUTURE ! *Completing laboratory validation tests on hydrogen-fueled 50 kW (full-scale) proton exchange membrane fuel cell propulsion systems that can be tested under automotive drive cycle requirements. (EE)* (SUCCESSFUL)	**ER3-1 DESIGNING AND DELIVERING THE VEHICLES OF THE FUTURE** ! *By September 1999, in cooperation with industry and other federal agencies, develop a direct injection power system technical roadmap and a fuel cell power system technical roadmap to integrate fuels and lubricants research and development with development of engine and emissions treatment technologies. (EE)*	**ER3-1 DESIGNING AND DELIVERING THE VEHICLES OF THE FUTURE** ! *Work with three domestic automakers to incorporate the most promising Partnership for a New Generation of Vehicles (PNGV) technologies in concept vehicles with up to three times average fuel economy of 1993 Taurus, Lumina and Concorde models. (EE)*
ER3-2 IMPROVING EFFICIENCY OF ENERGY INTENSIVE INDUSTRIES ! *Initiating work on facilitating a Mining and Agriculture Industry Vision, and facilitating development of selected state-wide Industries of the Future strategies. Roadmaps will be completed in the Aluminum, Chemical, Forest Products, Glass, Metalcasting, and Steel Industries, and will drive the DOE R&D portfolio. (EE)* (FULLY SUCCESSFUL) ! *Continuing support for Industrial Assessment Centers operating at 30 participating universities that will conduct approximately 750 combined energy, waste and productivity assessments. (EE)* (SUCCESSFUL)	**ER3-2 IMPROVING EFFICIENCY OF ENERGY INTENSIVE INDUSTRIES** ! *Complete roadmaps for six of the major energy intensive industries to achieve each industry vision and start implementing the resulting R&D to achieve up to 25 percent reduction of energy consumption by 2010. (EE)* ! ~~*Expand the Clean Cities program to create continuous corridors of alternative transportation fuel availability in and between 10 major urban centers. (EE)*~~ <moved to ER1-4> ! *Continue support for Industrial Assessment Centers operating at 30 participating universities that will conduct approximately 750 combined energy, waste and productivity assessments. (EE)*	**ER3-2 IMPROVING EFFICIENCY OF ENERGY INTENSIVE INDUSTRIES** ! *Initiate 12 solicitations with industry in support of the Roadmaps developed in the Industries of the Future program. (EE)* ! *Establish partnerships with 50 Industries of the Future plants to provide integrated delivery of tools and technical assistance to target motors, steam, compressed air, and combined heat and power system opportunities. (EE)*

ER-3 Reduce the energy-related environmental impacts through more efficient energy use. (EE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER3-3 IMPROVING THE ENERGY EFFICIENCY OF BUILDINGS ! *Weatherizing approximately 63,335 low-income homes. (EE)* (SUCCESSFUL) ! *Adding windows to the Energy Star product portfolio; doubling the number of retail stores labeling Energy Star appliances to 2,400 nationwide; recruiting four major appliance manufacturers to label Energy Star appliances at the factory; increasing sales of Energy Star appliances by 30 percent over 1997. (EE)* (SUCCESSFUL) ! *Recruiting 55 new Rebuild America partnerships to join the program, increasing the total number of Rebuild America communities to 195, representing all 56 states and territories. (EE)* (SUCCESSFUL) ! *Building 200 energy efficient homes in partnership with industry. These homes will be designed to save 50% of energy used for heating, cooling, & hot water at no incremental costs. Activities will be coordinated with the public and private Partnership for Advanced Technology in Housing (PATH). (EE)* (SUCCESSFUL)	**ER3-3 IMPROVING THE ENERGY EFFICIENCY OF BUILDINGS** ! *Weatherize 67,845 homes, bringing the total number of homes weatherized to 4.7 million. (EE)* ! *Work with the Federal Trade Commission to allow manufacturers to add the ENERGY STAR logo to the yellow and black FTC "Energy Guide" label for covered products and recruit an additional 1,500 stores to market ENERGY STAR appliances nationwide. (EE)* ! *Recruit 55 additional Rebuild America partnerships. New partners will begin action plans that will result in over 250 million square feet of floor space renovated, reduce annual energy costs by over $90 million and reduce annual carbon emissions by 0.22 million metric tons. (EE)* ! *Complete 100 homes through the Building America program bringing the total number of homes completed to 700, and add five new community scale projects for building 1000 additional homes in the next fiscal year. (EE)* ! *Maintain an industry cost-share level of over 40 percent, when averaged across all work with industry. (EE)*	**ER3-3 IMPROVING THE ENERGY EFFICIENCY OF BUILDINGS** ! *Weatherize 76,900 homes, bringing the total number of homes weatherized to 4.8 million. (EE)* ! *Recruit 5 utility partners to promote Energy Star products; an additional 500 retail stores to promote Energy Star products; and 40 window partners to promote Energy Star Windows. (EE)* ! *Recruit 50 new Rebuild America Partners, increasing the total number of Rebuild America communities to 330. New partners will begin action plans that will result in over 100 million square feet of floor space renovated, reducing annual energy costs by $28 million and reducing CO_2 emissions by 100 thousand metric tons when local actions are completed in 2003. (EE)* ! *In partnership with Building America, develop more than 2,000 highly energy-efficient, environmentally sound, and cost-effective houses and disseminate results to builders of 15,000 other houses through Partnership for Advanced Technology in Housing (PATH). (EE)* ! *Achieve 20% Federal building energy reduction compared to 1985 energy use baseline. (EE)*

ER-3 Reduce the energy-related environmental impacts through more efficient energy use. (EE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
	! *Accumulate customer economic savings from past and current Energy Efficiency/Renewable Energy programs exceeding $11 billion. (EE)* ! *Develop progress milestones and estimates of energy-related program benefits annually for every Energy Efficiency/Renewable Energy program. Review 25 percent of the milestones and estimated benefits through external peer review each year with a goal of having all milestones and estimated benefits peer-reviewed at least once every four years. (EE)*	

Means & Strategies for FY 2000: The Department will collaborate with the Big Three automobile companies, the Department of Transportation, and the Department of Commerce under the Partnership for a New Generation of Vehicles (PNGV) to conduct R&D that reduces vehicle emission levels, partner with manufacturers in the most energy intensive industries to implement vision roadmaps, and partner with states, retail stores, and other federal agencies to foster deployment of energy efficiency technologies in buildings.

ER-4 Support U.S. energy, environmental, and economic interests in global markets. (EE, FE, PO)

Long-term Strategies: Over the next several years, the Department will (1) develop policies, programs, and information to facilitate energy sector reductions in greenhouse gas emissions; and (2) cooperate with foreign governments and international institutions to develop open energy markets, and facilitate the adoption and export of clean, safe, and efficient energy technologies and energy services.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER4-1 PLANNING FOR ENERGY RELATED GREENHOUSE GAS REDUCTIONS ! *Completing a climate change technology strategy in partnership with national laboratories, private industry and top universities as part of the President's Climate Change Technology Initiative to develop path-breaking technologies to address climate change. (PO)* (FULLY SUCCESSFUL) ~~! *Maintaining our 600+ existing Climate Challenge partnership agreements supporting integration of energy efficiency and renewable energy technologies into our partner's Carbon abatement programs. (EE)*~~ <moved to ER1-4> ! *Developing and assessing options for implementing the new international agreement proposed at the Kyoto Conference of the Parties to the U.N. Framework Convention on Climate Change by: (PO)* - *Supporting through quantitative analyses and international contacts, Administration efforts to obtain meaningful commitments for reducing greenhouse gas emissions from developing countries.* - *Providing institutional arrangements and technologies for the Monitoring and Verification of treaty compliance under the Framework on Climate Change.* S *Completing assessments of alternative approaches for implementing domestic and international greenhouse gas emissions trading.* (SUCCESSFUL)	**ER4-1 PLANNING FOR ENERGY RELATED GREENHOUSE GAS REDUCTIONS** ! *Develop a DOE proposal for guidelines for implementing the flexibility mechanisms included in the Kyoto Protocol. (PO)* ! *Support through quantitative analysis and international contacts, Administration efforts to obtain meaningful commitments for reducing greenhouse gas emissions from developing countries. (PO)* ! *Lead the U.S. Government technology and climate change strategy development and implementation through: (PO)* - *Chairing and expanding the Annex II countries' Climate Technology Initiative which promotes the objectives of the UN Framework Convention on Climate Change (UNFCCC) by fostering international cooperation for accelerated development and diffusion of climate-friendly technologies and practices for all activities and greenhouse gases.* - *Leading and facilitating the development of U.S. positions on technology issues in the climate negotiations including participation in the UNFCCC technology consultation process.*	**ER4-1 PLANNING FOR ENERGY RELATED GREENHOUSE GAS REDUCTIONS** ! *Develop a DOE proposal for guidelines for implementing the flexibility mechanisms included in the Kyoto Protocol. (PO)* ! *Support through quantitative analysis and international contacts, Administration efforts to obtain meaningful commitments for reducing greenhouse gas emissions from developing countries. (PO)* ! *Lead the U.S. Government technology and climate change strategy development and implementation through: (PO)* -- *Chairing and expanding the Annex II countries' Climate Technology Initiative which promotes the objectives of the UN Framework Convention on climate change by fostering international cooperation for accelerated development and diffusion of climate-friendly technologies and practices for all activities and greenhouse gases.* -- *Leading and facilitating the development of U.S. positions on technology issues in the climate negotiations including participation in the UNFCCC technology consultation process.*

ER-4 Support U.S. energy, environmental, and economic interests in global markets. (EE, FE, PO) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER4-2 COOPERATING INTERNATIONALLY TO DEVELOP OPEN ENERGY MARKETS ! *Assisting to remove policy, regulatory and fiscal barriers to U.S. companies in energy efficiency, renewables, oil and gas, coal bed methane and clean coal technology, and nuclear energy markets, in China, India, Indonesia, the Philippines, Mexico, Venezuela, Argentina, Chile, Brazil, Russia, Ukraine, Caspian countries, South Africa, and in other developing economies. (PO)* (SUCCESSFUL) ! *Continuing coordination of the Russian-American Fuel Cell Consortium (RAFCO) which has as one of its primary goals the opening up of the Russian market to U.S. manufactured fuel cells. (PO)* (SUCCESSFUL)	**ER4-2 COOPERATING INTERNATIONALLY TO DEVELOP OPEN ENERGY MARKETS** ! *Increase U.S. energy-related business internationally by removing policy, legal and fiscal barriers for U.S. companies. In FY 1999 the Department will: (PO)* S *Implement with other APEC economies and the private sector an initiative to promote accelerated investment in natural gas infrastructure and trading networks in the APEC region;* S *Implement the "U.S.-China Energy and Environment Cooperation Initiative" including coordination of interagency effort involving DOE programs, EPA, Commerce and OSTP to promote rural electrification, urban air quality, clean energy sources, and energy efficiency;* S *Lead a regulatory reform initiative to promote economic growth through private investment in environmentally sound energy development and regional integration in Sub-Saharan Africa, including South Africa;* S *Lead a regulatory reform initiative under the Binational Commission to promote adoption by the Russian Government of transparent, fair and consistent regulations in the oil and gas, and power sectors in order to attract investment.*	**ER4-2 COOPERATING INTERNATIONALLY TO DEVELOP OPEN ENERGY MARKETS** ! *Increase U.S. energy-related business internationally by removing policy, legal and fiscal barriers for U.S. companies. In FY 1999 the Department will:(PO)* S *Continue to implement with other APEC economies and the private sector an initiative to promote accelerated investment in natural gas infrastructure and trading networks in the APEC region;* S *Implement the "U.S.-China Energy and Environment Cooperation Initiative" including coordination of interagency effort involving DOE programs, EPA, Commerce and OSTP to promote rural electrification, urban air quality, clean energy sources, and energy efficiency;* S *Continue to lead a regulatory reform initiative to promote economic growth through private investment in environmentally sound energy development and regional integration in Sub-Saharan Africa, including South Africa;* S *Continue to lead a regulatory reform initiative under the Binational Commission to promote adoption by the Russian Government of transparent, fair and consistent regulations in the oil and gas, and power sectors in order to attract investment.*

Means & Strategies for FY 2000: The Department will continue work in climate change through studies, international cooperation, and leadership. Work on opening international energy markets will include meetings with other U.S.

governmental agencies including EPA, Commerce, and the President's Office of Science and Technology Policy, as well as international energy organizations.

ER-5 Carry out information collection, analysis, and research that will facilitate development of informed positions on long-term energy supply and use alternatives. (EIA, FE, EE)

Long-term Strategies: Over the next several years, the Department will (1) develop and expand public access to energy data, forecasts, analyses, and educational materials; and (2) carry out research and scenario analysis to help identify and understand options that could revolutionize 21st century energy markets.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ER5-1 EXPANDING PUBLIC ACCESS TO ENERGY INFORMATION ! *The average number of unique monthly users of the Energy Resources Board Web Sites (Http://www.eren.doe.gov/) will grow at least 20 percent per year through 2003 (from about 70,000 per month in 1996.) (EIA)* (FULLY SUCCESSFUL) ! *Publishing domestic and international Annual Energy Outlooks, forecasting future energy supply and consumption through the year 2020. (EIA)* (FULLY SUCCESSFUL) ! *Completing by April 1998, for submission to Congress, an initial comprehensive national energy strategy that integrates major Federal government energy-related activities. (PO)* (FULLY SUCCESSFUL) **ER5-2 DEVELOPING INNOVATIVE OPTIONS FOR 21ST CENTURY ENERGY MARKETS** ! *Completing analysis of data from test well in Mackenzie Delta to help define the volume and production characteristics of Arctic methane hydrates. (FE)* (FULLY SUCCESSFUL)	**ER5-1 EXPANDING PUBLIC ACCESS TO ENERGY INFORMATION** ! *Achieve a growth rate of at least 20 percent per year in the average number of unique monthly users of the Energy Resources Board Web Site (from about 71,000 per month in 1997). (EIA)* ! *Publish domestic and international Annual Energy Outlooks forecasting energy supply and consumption through the year 2020. (EIA)* **ER5-2 DEVELOPING INNOVATIVE OPTIONS FOR 21ST CENTURY ENERGY MARKETS** ! *Initiate a coordinated, Department-wide program to develop lower-cost, environmentally acceptable technology approaches to carbon capture and sequestration. (FE)* ! *Complete preliminary version of gas hydrate seismic model based on field and laboratory data. (FE)* ! *Complete scale-up of the Sorbent Enhanced Reformer concept for hydrogen production. (EE)* ! ~~*Complete a conceptual design study of an innovative fusion power system and evaluate the next steps as guidance to science and technology research. (ER)*~~ <Moved to ST-1>	**ER5-1 EXPANDING PUBLIC ACCESS TO ENERGY INFORMATION** ! *Achieve a growth rate of at least 20 percent per year, through 2002, in the average number of unique monthly users of the Energy Resources Board Web Site (from about 110,000 per month in 1998). (EIA)* ! *Publish domestic and international Annual Energy Outlooks forecasting energy supply and consumption through the year 2020. (EIA)* ! *Respond to 60,000 inquiries by individuals, small businesses, and state and local government through the Energy Efficiency and Renewable Energy Clearinghouse (EREC). Increase the average monthly hits to 4 million on the Energy Efficiency and Renewable Energy Network (EREN) which provides information on the Internet. (EE)* **ER5-2 DEVELOPING INNOVATIVE OPTIONS FOR 21ST CENTURY ENERGY MARKETS** ! *Demonstrate over 90 percent absorption of CO_2 in a sorbent enhanced reformer reactor for hydrogen production. (EE)* ! *Identify a site containing gas hydrates suitable for testing the feasibility of methane recovery. (FE)* ! *Initiate development of biological CO_2 sequestration by conversion into useful products such as liquid fuels. (FE)*

Means & Strategies for FY 2000: The Department of Energy will continue to educate the public and business on energy efficiency and renewable energy technologies through easily assessable high quality material provided through a telephone clearinghouse and Internet site.

NATIONAL SECURITY

GOAL: Support national security, promote international nuclear safety, and reduce the global danger from weapons of mass destruction.

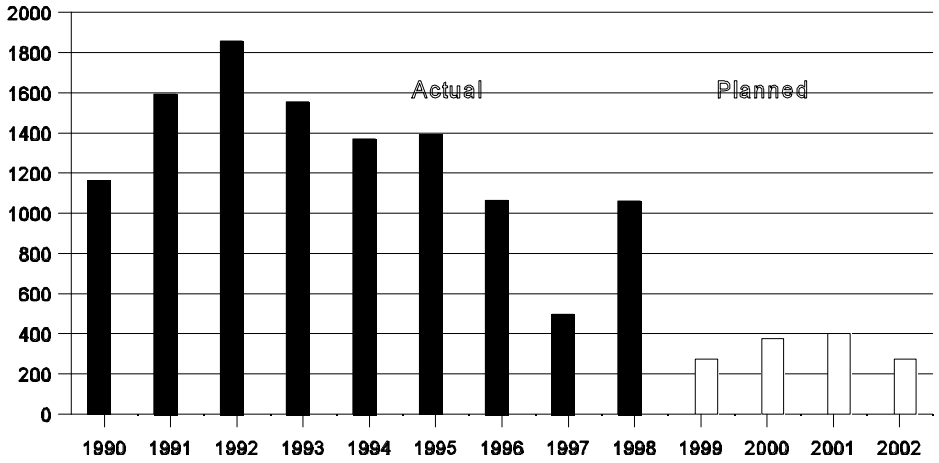

Figure 6: Nuclear Warhead Dismantlement Activity

The following table maps the Presidential Budget's Program and Financing (P&F) accounts and program activities to the Department of Energy's offices and decision units. The alignment includes aggregation, disaggregation, and consolidation. The table that follows this one maps DOE decision units to the business line objectives where performance measures and goals are identified.

Presidential Budget Program and Financing (P&F) Accounts and Program Activities		***FY 2000 Budget Request ($M)***	***DOE Office***	***DOE Decision Units***
050 Atomic Energy Defense Activities				
Weapons Activities				
	Stockpile stewardship	$2,286	DP	Stockpile Stewardship
	Stockpile management	$1,998	DP	Stockpile Management
	Program Direction	$247	DP	Program Direction
Other Defense Activities				
	Nonproliferation and national security	$748	NN	Nonproliferation and National Security
	Fissile materials disposition	$200	MD	Fissile Materials Disposition
	Worker and community transition	$30	WT	Worker & Community Transition
	Naval reactors	$665	NE(NR)	Naval Reactors
	Intelligence	$36	IN	Intelligence
	Counterintelligence	$19	CN	Counterintelligence
270 Energy Supply [6]		$269	NE	Nuclear Energy

[6] Only a portion of the Energy Supply resources are applied to the National Security Business Line.

The following table indicates which budget program/decision units support which of the business line objectives. Resources, in both funds and Full Time Equivalent staff (FTEs), are shown. FTE estimates are for the overall program offices. The funds shown are program totals from DOE's budget request.

DOE Office	**DOE Program/ Decision Unit**	FY 2000 Budget Request ($M)	FTEs	NS-1 Stockpile Confidence	NS-2 Science-Based Steward-ship	NS-3 Enterprise Vitality	NS-4 Weapons Reductions	NS-5 Arms Control & Nonpro-liferation	NS-6 Nuclear Power Systems	NS-7 Nuclear Safety
DP	Stockpile Stewardship	$2,286	1,799	X	X	X	X			
	Stockpile Management	$1,998		X		X	X			
	Program Direction	$247				X				
NN	Nonproliferation & National Security	$748	374			X	X	X		X
MD	Fissile Materials Disposition	$200	39			X	X			
NR	Naval Reactors	$665	201						X	
IN	Intelligence	$36	37					X		
CN	Counter-intelligence	$19	36			X		X		
WT	Worker & Community Transition	$30	22			X				
NE	Nuclear Energy, Science & Technology [7]	$269	144				X			

[7] Only a portion of Nuclear Energy resources are applied to the National Security Business Line.

NS-1 Maintain confidence in the safety, reliability, and performance of the nuclear weapons stockpile without nuclear testing. (DP)

Long-term Strategies: Over the next several years, the Department will (1) extend the life of U.S. nuclear weapons by continuing the Stockpile Life Extension Program and Stockpile Maintenance activities; (2) improve detection and prediction capabilities for assessing nuclear weapon component performance and the effects of aging; (3) continually evaluate the safety, reliability, and performance of the nuclear weapons stockpile; and (4) provide a reliable source of tritium as required for the nuclear weapons stockpile by FY 2005.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS1-1 MAINTAINING THE ENDURING STOCKPILE ! *Certifying the nuclear weapons stockpile safety, reliability, and performance according to DOE/DoD procedures. (DP)* (FULLY SUCCESSFUL)[8] ! *Meeting all DoD annual weapons alteration, modification, and surveillance schedules. (DP)* (SUCCESSFUL)	**NS1-1 MAINTAINING THE ENDURING STOCKPILE** ! *Report annually to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapons stockpile. (DP)* ! *Meet all annual weapons alteration and modification schedules developed jointly by DOE and DoD. (DP)*	**NS1-1 MAINTAINING THE ENDURING STOCKPILE** ! *Annually report to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapons stockpile. (DP)* ! *Meet all annual weapons alteration and modification schedules developed jointly by DOE and DoD. (DP)* ! *Undertake an independent assessment of the Stockpile Stewardship Program and its implementation throughout the DP national security enterprise. (DP)*
NS1-2&3 [Combined with NS1-1]	**NS1-2&3** [Combined with NS1-1]	**NS1-2&3** [Combined with NS1-1]
NS1-4 DEVELOPING A REPLACEMENT SOURCE OF TRITIUM ! *Completing the analysis to support the selection by December 1998, of a new production source for tritium. (DP)* (SUCCESSFUL)	**NS1-4 DEVELOPING A REPLACEMENT SOURCE OF TRITIUM** ! ~~*Begin the implementation*~~ *Continue development of the dual-path option~~s decision to provide a reliable source of tritium as required for the nuclear weapons stockpile~~. and select, by December 1998, a primary tritium production technology.*[9] *(DP)*	**NS1-4 DEVELOPING A REPLACEMENT SOURCE OF TRITIUM** ! *Begin implementation of the selected commercial light water reactor technology as a primary technology and the accelerator technology as a backup technology to provide a reliable source of tritium for the nuclear weapons stockpile. (DP)*

[8] End-of-year results of FY 1998 Performance Agreement commitments are classified as "FULLY SUCCESSFUL", "SUCCESSFUL", "PARTIALLY SUCCESSFUL", or "UNSUCCESSFUL" for performance judged to be effectively 100% or better, 80-100%, 50-80%, or less than 50% respectively.

[9] Revised to reflect the Congressional delay in implementing the decision.

Means & Strategies for FY 2000: The Department will conduct a wide range of tests and activities to assess the continuing safety and reliability of the nation's nuclear weapon stockpile. Overall technical reviews by the weapons laboratories of stockpile weapons will encompass laboratory and flight tests of materials and components, surveillance tests, and hydrodynamic testing of components. Calculations and computer simulations of weapons will be used in these assessments. Weapon analyses will utilize data archived from past underground nuclear tests. Working through the weapon production plants and the laboratories, DOE will make deliveries of limited life and other weapon components for nuclear weapon stockpile management and refurbishment according to schedules developed jointly by the DOE and DoD. Studies will be conducted for the Stockpile Readiness and Enduring Stockpile program. Activities will be conducted with the Department of Defense, ranging from training in nuclear weapon field maintenance to partnerships in research supporting non-nuclear munitions. DOE will also begin implementation of selected technology and backup to provide a new tritium source. Construction activities will proceed for the light water reactor technology, and design and development of the accelerator technology backup will complete a preliminary design for an Accelerator Production of Tritium (APT) plant.

NS-2 Replace nuclear testing with a Stockpile Stewardship Program. (DP)

Long-term Strategies: Over the next several years, the Department will (1) develop the advanced simulation, modeling and experimentation technologies necessary to confidently mitigate the loss of underground testing by FY 2004; (2) develop new nuclear weapons physics experimental test capabilities; and (3) advance our understanding of the fundamental characteristics of weapons behavior through systems engineering and advanced experiments and modeling to support future assessments of weapons safety, reliability, and performance.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS2-1 REPLACING UNDERGROUND TESTING WITH SCIENCE ! *Meeting established schedules for the development and installation of a 3-trillion operations per second computer systems. (DP)* (FULLY SUCCESSFUL)	**NS2-1 REPLACING UNDERGROUND TESTING WITH SCIENCE** ! *Demonstrate a 3-trillion operations per second computer system. (DP)*	**NS2-1 REPLACING UNDERGROUND TESTING WITH SCIENCE** ! *Demonstrate a computer code capable of performing a three-dimensional analysis of the dynamic behavior of a nuclear weapon primary, including a prediction of the total explosive yield, on an ASCI computer system. (DP)*
NS2-2 DEVELOPING NEW EXPERIMENTAL CAPABILITIES FOR UNDERSTANDING WEAPONS SCIENCE ! *Beginning the physical construction according to schedules in the Project Execution Plan for the National Ignitions Facility(NIF). (DP)* (FULLY SUCCESSFUL)	**NS2-2 DEVELOPING NEW EXPERIMENTAL CAPABILITIES FOR UNDERSTANDING WEAPONS SCIENCE** ! *Continue construction of the National Ignition Facility (NIF) according to its Project Execution Plan schedules. (DP)*	**NS2-2 DEVELOPING NEW EXPERIMENTAL CAPABILITIES FOR UNDERSTANDING WEAPONS SCIENCE** ! *Continue construction of the National Ignition Facility (NIF) according to its Project Execution Plan schedules. (DP)*
NS2-3 CONDUCTING EXPERIMENTS TO ADVANCE OUR UNDERSTANDING OF WEAPONS BEHAVIOR ! *Conducting three or four subcritical experiments to provide information about the behavior of nuclear materials during the implosion phase of a nuclear weapon. (DP)* (PARTLY SUCCESSFUL: only two tests were completed because of technical challenges.)	**NS2-3 CONDUCTING EXPERIMENTS TO ADVANCE OUR UNDERSTANDING OF WEAPONS BEHAVIOR** ! *Conduct ~~three or four~~ two or three[10] subcritical experiments at the Nevada Test Site to provide valuable scientific information about the behavior of nuclear materials during the implosion phase of a nuclear weapon. (DP)*	**NS2-3 CONDUCTING EXPERIMENTS TO ADVANCE OUR UNDERSTANDING OF WEAPONS BEHAVIOR** ! *Conduct two subcritical experiments at the Nevada Test Site to provide valuable scientific information about the behavior of nuclear materials during the implosion phase of a nuclear weapon. (DP)*

Means & Strategies for FY 2000: The Department will demonstrate 3-dimensional computer codes that simulate the dynamic behavior of a nuclear weapon primary, including a prediction of total explosive yield, and simulate the dynamic

[10] Adjusted due to increases in the cost and complexity of experiments.

response of a nuclear weapon system to the hostile radiation and blast environment of reentry. Also, DOE will continue construction of the National Ignition Facility at the Lawrence Livermore National Laboratory, including continuation of construction of conventional facilities, completing facilitization of optics vendors, and completing pilot production for the facility's optics components. The laboratories will work at the Nevada Test Site to design, engineer, field, and execute subcritical experiments.

NS-3 Ensure the vitality of DOE's national security enterprise (DP, NN, MD, WT)

Long-term Strategies: Over the next several years, the Department will (1) provide an appropriately-sized, cost-effective, safe, secure, and environmentally sound national security enterprise; (2) ensure that sufficient scientific and technical personnel are available to meet DOE's long-term national security requirements; (3) ensure and enhance protection of nuclear materials, sensitive information, and facilities; (4) provide DOE-related intelligence and threat assessment support to members of the national security community; and (5) maintain nuclear test readiness and enhance emergency management capabilities to address any nuclear weapons, radiological, or other emergency in the United States or abroad.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS3-1 DOWNSIZING AND MODERNIZING THE NATIONAL SECURITY ENTERPRISE ! *Ensuring that all facilities required for successful achievement of the Stockpile Stewardship and Management Plan remain operational, and the established schedules for downsizing and modernization of the production facilities are met. (DP)* (PARTIALLY SUCCESSFUL: Projects were behind schedule.) ! *Conducting Security System Reviews and Joint Tactical System Analyses at six major DOE facilities and validate through that process that adequate security measures exist. (NN)* (SUCCESSFUL) ! *Working in cooperation with other Departmental elements to add at least 90 protective force personnel at various DOE field sites to enhance protection of SNM; start S&S upgrades at five facilities; and complete S&S upgrades at two facilities. (NN)* (SUCCESSFUL) ! *Continuing shipment of Rocky Flats plutonium pits to Pantex with the goal of completing all shipments by FY 1999. (MD)* (SUCCESSFUL) **NS3-2** [Combined with NS3-1]	**NS3-1 DOWNSIZING AND MODERNIZING THE NATIONAL SECURITY ENTERPRISE** ! *Ensure that all facilities required for successful achievement of the Stockpile Stewardship Plan remain operational. (DP)* ! *Meet the established schedules for downsizing and modernizing of our production facilities. (DP)* ! *Complete the shipment of plutonium pits from Rocky Flats to Pantex. (MD)* ! *Conduct oversight reviews to ensure that an effective Safeguards and Security program is maintained at all nuclear weapons facilities. (NN)* ! *Develop a comprehensive Weapons of Mass Destruction Defense Plan which addresses security planning, equipment, training, and exercise requirements. (NN)* ! *Plan, coordinate, conduct and participate in an Interagency National Security Technology Exchange (INTSE) conference. (NN)* **NS3-2** [Combined with NS3-1]	**NS3-1 DOWNSIZING AND MODERNIZING THE NATIONAL SECURITY ENTERPRISE** ! *Ensure that all facilities required for successful achievement of the Stockpile Stewardship Plan remain operational. (DP)* ! *Meet the established schedules for downsizing and modernizing our production facilities. (DP)* ! *Complete the upgrade of storage facilities at the Pantex Plant for storing surplus plutonium pits. (MD)* **NS3-2** [Combined with NS3-1]

NS-3 Ensure the vitality of DOE's national security enterprise. (DP, NN, MD, WT) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS3-3 PROTECTING NUCLEAR MATERIALS, PRODUCTION, AND FACILITIES ! *Developing and field testing an advanced vehicle portal test bed designed to prevent entry of unauthorized personnel and contraband. (NN)* (SUCCESSFUL) ! *Completing plans and preparations for initiating in FY 1999, the correction of DOE infrastructure vulnerabilities identified by the President's Commission on Critical Infrastructure Protection. (NN)* (PARTIALLY SUCCESSFUL: Completion was delayed until just after the end of the fiscal year. Submission of plans to the National Security Council was accomplished on November 18, 1998.) **NS3-4** [Combined with NS3-3]	**NS3-3 PROTECTING NUCLEAR MATERIALS, PRODUCTION, AND FACILITIES** ! *Initiate needed material protection, control, and accountability upgrades at DOE facilities with weapons-usable material. (NN)* ! *Further the protection of all U.S. origin nuclear materials in the U.S. and abroad from possible theft, loss, or illicit trafficking. (NN)* ! *Develop information on nuclear materials contained in waste in a new Departmental database for all nuclear materials by the end of the first quarter of FY 1999. (NN)* ! *Develop advanced safeguards and security technologies for implementation in FY 2000. (NN)* ! *Implement advanced technologies to prevent the theft or diversion of special nuclear materials including the unattended on-line gamma-ray monitor. (NN)* ! *Issue timely technical reports and threat assessments regarding potential domestic and/or foreign proliferant risks. (NN)* **NS3-4** [Combined with NS3-3]	**NS3-3 PROTECTING NUCLEAR MATERIALS, PRODUCTION, AND FACILITIES** ! *Continue material protection, control, and accountability upgrades at DOE facilities with weapons-usable material. (NN)* ! *Expand forensic analysis for improved cyber security for classified information systems. (NN)* ! *Reduce DOE facilities' vulnerabilities to chemical threats through sensor development and chemical protective equipment. (NN)* ! *Initiate the correction of DOE infrastructure vulnerabilities identified by the President's Commission on Critical Infrastructure Protection. (NN)* **NS3-4** [Combined with NS3-3]

NS-3 Ensure the vitality of DOE's national security enterprise. (DP, NN, MD, WT) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS3-5 MAINTAINING READINESS FOR NUCLEAR EMERGENCIES ! *Ensuring that the capability to resume underground testing is maintained in accordance with the Presidential Decision Directive and Safeguard C of the CTBT through a combined experimental and test readiness program. (DP)* (FULLY SUCCESSFUL) ! *Maintaining robust emergency response assets in accordance with Presidential Decision Directive 39, The Atomic Energy Act of 1954 and Executive Order 12656 to ensure Departmental response to any nuclear weapons or radiological emergency in the United States or abroad. (DP)* (FULLY SUCCESSFUL)	**NS3-5 MAINTAINING READINESS FOR NUCLEAR <u>OR OTHER</u>[11] EMERGENCIES** ! *Ensure that the capability to resume underground testing is maintained in accordance with the Presidential Decision Directive and Safeguard C of the Comprehensive Test Ban Treaty. (DP)* ! *Demonstrate improvement of a comprehensive management system to ensure effective Departmental response to all DOE emergencies. (NN)* ! *Maintain robust emergency response assets in accordance with Presidential Decision Directive 39, The Atomic Energy Act, Executive Order 12656, and Federal Emergency Plans (DP/NN)* ! ~~*Coordinate with Federal, State, and local governments and private energy companies to achieve prompt restoration of energy systems following major domestic energy emergencies. (NN)*~~ [12]	**NS3-5 MAINTAINING READINESS FOR NUCLEAR OR OTHER EMERGENCIES** ! *Ensure that the capability to resume underground testing is maintained in accordance with the Presidential Decision Directive and Safeguard C of the CTBT. (DP)* ! *Demonstrate improvement of a comprehensive management system to ensure effective Departmental response to all DOE emergencies. (NN)* ! *Maintain robust emergency response assets in accordance with Presidential Decision Directive 39, The Atomic Energy Act, Executive Order 12656, and Federal Emergency Plans. (DP)*

[11] Revised to include both DP and NN's role.

[12] Prohibited by the FY 1999 Defense Authorization Act and the Energy and Water Appropriation.

NS-3 Ensure the vitality of DOE's national security enterprise. (DP, NN, MD, WT) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS3-6 MANAGING CONTRACTOR WORK FORCE RESTRUCTURING <moved from CM-3> ! *Implementing a single Department-wide automated contractor workforce employment data system. (WT)* (SUCCESSFUL) ! *Achieving annual recurring cost savings from separated workers that are at least three times the one time cost of separation. (WT)* (FULLY SUCCESSFUL) ! *Supporting local community transition activities that will create 8,000 to 12,000 new private sector jobs by the end of FY 1998. (WT)* (FULLY SUCCESSFUL)	**NS3-6 MANAGING CONTRACTOR WORK FORCE RESTRUCTURING** <moved from CM-3> ! *Implement initiatives to accelerate asset conversion and reuse that will result in more than $1 billion in long term savings to the Department and facilitate economic diversification of local communities. (WT)* ! *Keep involuntary separations between 30 and 60 percent of positions eliminated while assuring maintenance of essential work force skills mix and productivity. (WT)* ! *Achieve annual recurring costs savings from separated workers that is at least three times the one time cost of separation. (WT)* ! *Support local community transition activities that will create, cumulatively, 15,000 to 20,000 new private sector jobs by the end of FY 1999. (WT)*	**NS3-6 MANAGING CONTRACTOR WORK FORCE RESTRUCTURING** ! *Limit involuntary termination of employment at Department of Energy defense nuclear facilities between 30 and60 percent of positions eliminated. (WT)* ! *Achieve annual recurring costs savings from separated workers that is at least three times the one time cost of separation. (WT)* ! *Support local community transition activities that will create, cumulatively, 20,00 to 30,000 new private sector jobs by the end of FY 2000. (WT)* ! *Achieve at least a two to one return on reinvested proceeds from the sale or lease of underutilized assets associated with the Asset Management Pilot Program and other reindustrialization activities.(WT)*

Means & Strategies for FY 2000: The Department will continue to oversee and maintain the infrastructure and plant at government-owned, contractor-operated weapons laboratories and plants according to applicable statues, laws, agreements, and standards. At the Savannah River, Pantex, Y-12, and Kansas City sites, construction activities will continue to reduce the operating footprint and facilitate consolidation of plant functions. DOE will also maintain appropriate infrastructure, personnel knowledge and exercised skills necessary to conduct an underground nuclear test within 2-3 years. Emergency response capability will be maintained through drills, exercises, and training activities at each national asset.

The Department will also expand existing partnerships between DOE Headquarters and Field elements and forge new partnerships to ensure a concerted Departmental effort. In addition, sound and improved risk management principles will be used to maintain a flexible protection posture against today's changing threat environment. The Department will achieve the workforce restructuring objectives through headquarters oversight and contractor performance measures that will encourage cost-effective use of voluntary separation strategies, manage attrition, and internal placement. The community transition goal will be achieved through financial and technical assistance provided to community reuse organizations at the affected sites. The economic conversion goal will be achieved through headquarters technical assistance and oversight to field organizations designed to encourage the leveraging of underutilized assets to achieve cost savings.

NS-4 Reduce nuclear weapons stockpiles and the proliferation threat caused by the possible diversion of nuclear materials. (DP, NN, MD, NE)

Long-term Strategy: Over the next several years, the Department will (1) dismantle nuclear warheads that have been removed from the U.S. nuclear weapons stockpile in a safe and secure manner; and (2) reduce inventories of surplus weapons-usable fissile materials worldwide in a safe, secure, transparent, and irreversible manner.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS4-1 REDUCING THE WEAPONS STOCKPILE ! *Adhering to schedules for the safe and secure dismantlement of approximately 1,000 nuclear warheads that have been removed from the U.S. nuclear weapons stockpile. (DP)* (FULLY SUCCESSFUL)	**NS4-1 REDUCING THE WEAPONS STOCKPILE** ! *Adhere to schedules for the safe and secure dismantlement of approximately ~~500~~ 275 [13] nuclear warhead that have been removed from the U.S. nuclear weapons stockpile. (DP)*	**NS4-1 REDUCING THE WEAPONS STOCKPILE** ! *Adhere to schedules for the safe and secure dismantlement of approximately 375 nuclear warheads that have been removed from the U.S. nuclear weapons stockpile. (DP)*
NS4-2 REDUCING INVENTORIES OF SURPLUS WEAPONS-USABLE FISSILE MATERIALS WORLDWIDE IN A SAFE, SECURE, TRANSPARENT, AND IRREVERSIBLE MANNER ! *Successfully completing irradiation of advanced LEU research reactor fuel test assembly to medium burn-up level at the ATR reactor in Idaho by March 1998. (NN)* (FULLY SUCCESSFUL) ! *Completing the dilution of 13 metric tons of excess HEU (approximately 3.5 metric tons in FY 1998) to LEU and implementing international safeguards at the Portsmouth Gaseous Diffusion Plant by August 1998. (NE/NN)* (FULLY SUCCESSFUL) ! *Conducting international inspection of the dilution of 7 metric tons of HEU by September 1998. (NN)* (FULLY SUCCESSFUL)	**NS4-2 REDUCING INVENTORIES OF SURPLUS WEAPONS-USABLE FISSILE MATERIALS WORLDWIDE IN A SAFE, SECURE, TRANSPARENT, AND IRREVERSIBLE MANNER** ! *Complete the final Environmental Impact Statement and issue a Record of Decision on siting plutonium disposition facilities. (MD)* ! *Place over 20 metric tons of excess highly enriched uranium (HEU) under International Atomic Energy Agency (IAEA) safeguards. (NN)* ! ~~*Initiate design and equipment procurement for a pilot-scale system in Russia to convert weapons plutonium to forms suitable for disposition and international inspection.*~~ *Initiate, by the end of FY 1999, negotiations with Russia on a bilateral agreement for the disposition of surplus weapons plutonium.*[14] *(MD)*	**NS4-2 REDUCING INVENTORIES OF SURPLUS WEAPONS-USABLE FISSILE MATERIALS WORLDWIDE IN A SAFE, SECURE, TRANSPARENT, AND IRREVERSIBLE MANNER** ! *Proceed with the design of key U.S. surplus plutonium disposition facilities by initiating Title I design for the Immobilization and Associated Processing Facility and completing Title I and initiating Title II design for the Pit Disassembly and Conversion and the MOX Fuel Fabrication Facilities. (MD)* ! *Place 10 metric tons of excess highly enriched uranium (HEU) under International Atomic Energy Agency (IAEA) safeguards in FY 2000. (NN)*

NS-4 Reduce nuclear weapons stockpiles and the proliferation threat caused by the possible diversion of nuclear materials. (DP, NN, MD, NE) (Continued)

[13] Reduction results from safety concerns, underestimated startup times for different weapon types, and constrained resources.

[14] Change reflects Presidential commitments regarding plutonium disposition resulting from the September 1998 U.S./Russian Summit.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
! *Ensuring 100 percent completion of progress reports on technical, legal and financial issues of the Trilateral Initiative and conduct evaluation of verification and monitoring technology by August 1998. (NN)* (FULLY SUCCESSFUL) ! *Fully implementing all transparency monitoring tasks associated with the dilution of 24 metric tons of HEU from dismantled Russian nuclear weapons to low enriched uranium (LEU) for purchase by the United States Enrichment Corporation. (NN)* (SUCCESSFUL) ! *Beginning the transfer of U.S. surplus HEU to the United States Enrichment Corporation for dilution and subsequent sale. (MD* (FULLY SUCCESSFUL) ! *Completing initial demonstration of a prototype integrated plutonium pit disassembly and conversion system. (MD)* (SUCCESSFUL) ! *Completing procurement for a private sector consortium to provide MOX fuel fabrication and irradiation services. (MD)* (SUCCESSFUL) ! *Initiating development of a Russian plutonium conversion and nondestructive assay prototype system. (MD)* (FULLY SUCCESSFUL)	! *Monitor the dilution of 30 metric tons of highly enriched uranium (HEU) to low enriched uranium (LEU) from dismantled Russian nuclear weapons for purchase by the United States Enrichment Corporation. (NN)* ! *Evaluate the impacts of warhead dismantlement and transparency initiatives. (NN)* ! *Initiate design for Pit Disassembly and Conversion and Mixed Oxide (MOX) Fuel Fabrication facilities. (MD)* ! *Continue transfer of U.S. surplus HEU to the United States Enrichment Corporation for dilution and subsequent sale. (MD)* ! *Remove all highly enriched uranium oxides from the Portsmouth site. (NE)* ! *Accomplish the milestones of the FMFIA corrective action plan for the Departmental challenge of surplus fissile materials. (MD/NN)*	! *Transfer 7 metric tons of highly enriched uranium to the United States Enrichment Corporation for down blending to low enriched uranium for sale and subsequent peaceful use in commercial nuclear reactors. (MD)* ! *Begin to implement a bilateral agreement with Russia for disposing of surplus weapons plutonium. (MD)* ! *Ensure safe, secure storage of spent nuclear fuel at the BN-350 Reactor in Rktau, Kazalchstan. Complete canning of the 2,000 spent fuel rods in the pool. (NN)* ! *Evaluate the impacts of warhead dismantlement and transparency initiatives. (NN)* ! *Conduct Russian technology demonstrations to further warhead dismantlement or transparency measures. (NN)* ! *Monitor the dilution of 30 metric tons of highly enriched uranium (HEU), from dismantled Russian nuclear weapons, to low enriched uranium (LEU) for purchase by the United States Enrichment Corporation. (NN)*

NS-4 Reduce nuclear weapons stockpiles and the proliferation threat caused by the possible diversion of nuclear materials. (DP, NN, MD, NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
		! *Conduct 24 special monitoring team visits to Russian HEU conversion and blending facilities; maintain a permanent presence office in Russia; and continue the planning for a second permanent presence office to be established at the Siberian Chemical Enterprise. (NN)* ! *Maintain and monitor the UF_6 flow and enrichment measurement nondestructive assay systems installed at the blend points at two Russian HEU dilution facilities. (NN)* ! *Compile and analyze collected data and information into an assessment of confidence of compliance with the nonproliferation objectives of the HEU Agreement. (NN)*

Means & Strategies for FY 2000: The Department will further reduce the nuclear danger by continuing a program of dismantling retired weapons, including studies and development of safe dismantlement procedures, characterization and disposition of components, and long term storage. The Department will also ensure that adequate budgetary and infrastructure resources and personnel are available to meet all program goals in a timely manner. To support highly enriched uranium disposition efforts, ensure that adequate numbers of ES-2 shipping containers, safe-secure transports (SSTs), and skilled personnel at the Oak Ridge Y-12 facility are available to package and ship the highly enriched uranium to down blending facilities. To support plutonium disposition efforts, complete the record of decision to select the site(s) where U.S. plutonium disposition will take place; ensure that a contract award is made to an industry consortium for the design of the MOX Fuel Fabrication Facility; and select architect-engineering (A&E) firm(s) to design the Pit Disassembly and Conversion Facility and the Immobilization and Associated Processing Facility. In support of work with Russia, develop with the State Department an interagency agreed-upon set of U.S. goals prior to proceeding to negotiate a plutonium disposition agreement with Russia; and conduct bilateral negotiations with Russia leading to a binding agreement for disposition of the Russian and U.S. plutonium declared excess to defense needs. If necessary, conduct multilateral negotiations with other G-8 nations to solidify their support.

NS-5 Continue leadership in policy support and technology development for international arms control and nonproliferation efforts. (NN)

Long-term Strategy: Over the next several years, the Department will (1) strengthen the nuclear nonproliferation regime through support of treaties and international agreements; (2) work with the states of the former Soviet Union and others to minimize the risks of proliferation; and (3) advance nonproliferation technology.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS5-1 STRENGTHENING THE NUCLEAR NONPROLIFERATION REGIME ! *In support of a Comprehensive Test Ban Treaty (CTBT), finalizing a plan for joint cooperation with the Russians to conduct a confidence-building activity by September 1998. (NN)* (PARTIALLY SUCCESSFUL: Placed on hold because discussions held in June and August 1998 have not reached a final determination on the scope of activities.) ! *Beginning a long-term nuclear spent fuel maintenance program in the Democratic Peoples Republic of Korea (DPRK) by June 1998, assuring a stable, non-corrosive storage for the duration of the program. (NN)* (PARTIALLY SUCCESSFUL: The work was put on hold due to DPRK's frustration with deliveries of heavy fuel oil to DPRK.) ! *Leading, via Joint Chairmanship, the interagency task force on warhead and fissile material, to create START III options for warhead elimination by January 1998. (NN)* (FULLY SUCCESSFUL) ! *Providing equipment, technologies and expertise to the IAEA and the United Nations Special Commission (UNSCOM) to perform monitoring and intrusive inspections in North Korea and Iraq sufficient to verify compliance with their obligations under the NPT. (NN)* (FULLY SUCCESSFUL)	**NS5-1 STRENGTHENING THE NUCLEAR NONPROLIFERATION REGIME** ! *Support U.S.-lead negotiations on the Fissile Material Cut-Off Treaty at the United Nations multi-lateral conference on disarmament in Geneva. (NN)*	**NS5-1 STRENGTHENING THE NUCLEAR NONPROLIFERATION REGIME** ! *Support negotiations on the Fissile Materials Cut-off Treaty. (NN)* ! *Implement a nuclear spent fuel maintenance plan by continuing technical dialogue with the Democratic Peoples Republic of Korea (DPRK). (NN)* ! *Lead, via the Joint Chairmanship, the interagency task force on warhead and fissile material to implement a START III concept for warhead elimination by July 2000. (NN)* ! *Provide equipment, technologies, & expertise to the IAEA and the United Nations Special Commission (UNSCOM) to perform monitoring & intrusive inspections in North Korea and Iraq sufficient to verify compliance with their obligations under the Non-Proliferation Treaty (NPT). (NN)*

NS-5 Continue leadership in policy support and technology development for international arms control and nonproliferation efforts. (NN) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS5-2 MINIMIZING THE RISKS OF PROLIFERATION ! *Making progress in material protection, control and accounting (MPC&A) upgrades at each of the 53+ facilities in Russia, the Newly Independent States (NIS), and the Baltics that use or store weapons-usable nuclear material. (NN)* (PARTIALLY SUCCESSFUL: Completed upgrades at 19 sites.) ! *Commissioning the MPC&A system at the Chelyabinsk-70 pulse research reactor by July 1998.(NN)* (FULLY SUCCESSFUL) ! *Completing the rapid security upgrades on at least l/2 of the 35 rail cars used to transport weapons-usable nuclear materials in Russia by September 1998. (NN)* (SUCCESSFUL) ! *Developing and implementing 12 commercial development projects at 6 primary biological and chemical weapons research and production facilities in Russia and Kazakhstan engaging an estimated 80 weapons experts. At least 6 projects will have subcontracts in place by April 1998 with the remaining 6 subcontracts in place by September 1998.(NN)* (FULLY SUCCESSFUL) ! *Developing and implementing 30 commercial development projects at nuclear weapons research and production facilities in Russia, Ukraine and Kazakhstan engaging approximately 1,000 weapons experts. All subcontracts will be in place by September 1998. (NN)* (FULLY SUCCESSFUL)	**NS5-2 MINIMIZING THE RISKS OF PROLIFERATION** ! *Continue to improve and integrate technology practices, facilities, and training for material protection, control, and accounting for approximately 650 metric tons of weapons-usable material at 53 locations. (NN)* ! *Field an initial joint DOE-Customs Service remote inspection system capable of identifying radiation signatures of potential nuclear smuggling packages. (NN)* ! *Support non-proliferation objectives through concluding key science and technology agreements on: (PO)* -- *Geologic research connected to radioactive waste disposal with the Russian Ministry of Atomic Energy;* -- *Renewal of the existing Peaceful Uses of Atomic Energy Agreement and beginning negotiations for a new and expanded agreement with Russia;* -- *Specific cooperative projects under the U.S.-China Peaceful Uses of Nuclear Technologies Agreement.*	**NS5-2 MINIMIZING THE RISKS OF PROLIFERATION** ! *Continue to install MPC&A upgrades for defense-related sites in Russia, including 5 major uranium and plutonium cities, 3 nuclear weapons complex sites, 10 Russian Navy projects, and security upgrades in the transportation sector.(NN)* ! *Continue to install MPC&A upgrades to Russian civilian and regulatory-related sites. (NN)* ! *Complete installation of MPC&A upgrades in all Russian Naval fresh fuel by December 2000. (NN)* ! *Equip 2-3 Russian sites and conduct 2 joint training sessions under a Second Line of Defense Initiative. (NN)* ! *Cooperate with Russian Federation Customs to create civilian ventures in Russia's formerly closed nuclear cities to block nuclear smuggling. (NN)*

NS-5 Continue leadership in policy support and technology development for international arms control and nonproliferation efforts. (NN) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals

! *Completing technical assistance initiatives in Russia, Ukraine and Kazakhstan by May 1998 to develop a cadre of export control and technical advisors on supplier policy and nuclear transfer activities. (NN)* (SUCCESSFUL) ! *Commencing prototypic fuel testing by July 1998 to support the core modifications required for the cessation of plutonium production at three Russian reactors. (NN)* (SUCCESSFUL) **NS5-3 ADVANCING NONPROLIFERATION TECHNOLOGY** ! *Transferring to the FBI newly developed technology which will provide a capability for rapid, sensitive, in-field analysis of hazardous biological materials and quick determination of associated terrorist threats. (NN)* (PARTIALLY SUCCESSFUL: This is a multi-year effort and there are 18 jointly funded projects underway.) ! *Delivering to the CTBT U.S. National Data Center a commercializable prototype of an ultrasensitive near-real-time analyzer for nuclear explosion produced Xenon isotopic gases. (NN)* (SUCCESSFUL) ! *Completing an airborne demonstration of a one-of-a-kind, quantitative chemical plume characterization capability, that uses lasers for weapons production facility monitoring. (NN)* (FULLY SUCCESSFUL)	**NS5-3 ADVANCING NONPROLIFERATION TECHNOLOGY** ! *Complete development and delivery to customers of two new counter-nuclear-smuggling detection technologies, one portable/hand-held and the other for wide area tracking and interdiction. (NN)* ! *Demonstrate, through airborne field tests, two new technologies that use chemical detection methods to remotely characterize weapons-of-mass-destruction proliferation activities. (NN)* ! *Deliver to the U.S. National Data Center for the Comprehensive Nuclear-Test-Ban Treaty the first half (Release 3) of an operational knowledge base that can be accessed by automated processing systems and human analysts to provide monitoring and verification confidence. (NN)*	**NS5-3 ADVANCING NONPROLIFERATION TECHNOLOGY** ! *Develop improved technologies and systems for early detection, identification, and response to weapons of mass destruction proliferation and illicit materials trafficking. (NN)* ! *Deliver three improved sensor systems for treaty monitoring to the U.S. Air Force. (NN)* ! *Deliver advanced technologies and analytical capabilities that comprise 80 percent of a knowledge base delivery to the CTBT U.S. National Data Center. (NN)* ! *Complete a prototype hand-held detector for enhanced detection of chemical agents. (NN)* ! *Develop and test a prototype subway protection system that integrates chemical sensor and predictive models into an emergency response information system. (NN)*

NS-5 Continue leadership in policy support and technology development for international arms control and nonproliferation efforts. (NN) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals

! *Delivering to the U.S. Air Force spacecraft integrating contractor the first 5 flight units of an extended-energy-range X-ray sensor for monitoring of nuclear explosions in space. (NN)* (FULLY SUCCESSFUL)		

Means & Strategies for FY 2000: In accomplishing its mission, the Department will call upon existing scientific and engineering expertise and laboratory facilities at eleven of the Department's national laboratories. Because of the crosscutting nature of the many international arms control and nonproliferation projects, the human and technological resources employed are by necessity multi-disciplinary, requiring a diverse technology base. The emphasis throughout the international arms control and nonproliferation program is close coordination with internal and external customers, to ensure responsiveness to their actual needs.

NS-6 Meet national security requirements for naval nuclear propulsion and for other advanced nuclear power systems. (NR)

Long-term Strategies: Over the next several years, the Department will (1) provide the U.S. Navy with safe, militarily-effective nuclear propulsion plants and ensure their continued safe and reliable operation; and (2) meet ongoing and future national security requirements for special nuclear power systems.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS6-1 PROVIDING SPECIAL NUCLEAR POWER SYSTEMS FOR NATIONAL SECURITY ! *Developing new reactor plants, including the next generation reactor, the design of which will be 75 percent complete in FY 1998 and ensuring the safety, performance reliability, and service-life of operating reactors. (NR)* (FULLY SUCCESSFUL) **NS6-1** [Combined with NS6-1]	**NS6-1 PROVIDING SPECIAL NUCLEAR POWER SYSTEMS FOR NATIONAL SECURITY** ! *Develop new reactor plants, including the next generation reactor, which will be 85 percent complete by the end of FY 1999, and ensure the safety, performance reliability, and service-life of operating reactors. (NR)* ! *Ensure radiation exposures to workers or the public from Naval Reactors' activities are within Federal limits and no significant findings result from environmental inspections by State and Federal regulators. (NR)* **NS6-1** [Combined with NS6-1]	**NS6-1 PROVIDING SPECIAL NUCLEAR POWER SYSTEMS FOR NATIONAL SECURITY** ! *Develop new reactor plants, including the next generation reactor, which will be 90 percent complete by the end of FY 2000, and complete initial development efforts on a reactor plant for CVNX. Ensure the safety, performance reliability, and service-life of operating reactors. (NR)* ! *Ensure radiation exposures to workers or the public from Naval Reactors' activities are within Federal limits and no significant findings result from environmental inspections by State and Federal regulators. (NR)* **NS6-1** [Combined with NS6-1]

Means & Strategies for FY 2000: To support development of reactor plants for the VIRGINIA Class submarines and the CVNX aircraft carrier; ensure safety, reliability and performance of operating reactor plans in Navy warships; and meet Navy goals for extended warship operation, the Department will:

Complete scheduled design, analysis, and testing of reactor plant components and systems.

Conduct planned development, testing, examination, and evaluation of nuclear fuel systems, materials, and manufacturing and inspection methods.

Accomplish planned testing, training and servicing involved with land-based prototype nuclear propulsion plants.

Carry out radiological control, environmental, and safety operations necessary to protect people, minimize release of hazardous effluents to the environment, and comply with all applicable regulations.

NS-7 Improve international nuclear safety. (NN, formerly NE)

Long-term Strategies: Over the next several years, the Department will (1) assist countries in reducing the risks from Soviet-designed nuclear power plants and implement a self-sustaining nuclear safety improvement program capable of reaching internationally accepted safety practices; (2) promote nuclear safety culture improvements internationally by providing strong leadership in international nuclear safety organizations and centers; and (3) assist in the multi-national effort to shut down Chornobyl Units 1, 2, and 3 in Ukraine before January 2001 and reduce the risk of possible collapse of the Unit 4 sarcophagus.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS7-1 ENHANCING THE SAFETY OF SOVIET-DESIGNED REACTORS AND PROMOTING INTERNATIONAL NUCLEAR SAFETY ! *Completing development of plant models and descriptions, conducting training programs and performing safety analysis calculations at the South Ukraine Unit 1 in Ukraine and the Kola Unit 4 in Russia, as part of in-depth safety assessments at nuclear power plants in Ukraine and in Russia. (NN)* (SUCCESSFUL) ! *Completing nuclear power plant simulator projects, at Novovoronezh in Russia and at Khmelnytskyy and Chornobyl in Ukraine. (NN)* (SUCCESSFUL) ! *Completing the installation of Safety Parameter Display Systems at the Zaporizhzhya plant in Ukraine and at the Novovorenezh plant in Russia. (NN)* (SUCCESSFUL) **NS7-2** [Combined with NS7-1]	**NS7-1 ENHANCING THE SAFETY OF SOVIET-DESIGNED REACTORS AND PROMOTING INTERNATIONAL NUCLEAR SAFETY** ! *Complete the development and implementation of an effective reactor plant operator training program at key plants based on the Systematic Approach to Training methodology used in the United States and provide and incorporate plant simulators into the operator training programs. (NN)* ! *Complete plans for critical asset identification within the Department and test vulnerability assessment techniques in two components of the Energy Sector. (NN)* ! *Provide preliminary safety assessment results to determine near-term safety improvements.(NN)* ! *Complete the installation of Safety Parameter Display Systems to improve operator response to emergencies at Leningrad Unit 4 and Novororonezh Unit 4. (NN)* ! *Promote U.S. positions and practices in international forums that advocate safe reactor operations. (NN)* **NS7-2** [Combined with NS7-1]	**NS7-1 ENHANCING THE SAFETY OF SOVIET-DESIGNED REACTORS AND PROMOTING INTERNATIONAL NUCLEAR SAFETY** ! *Complete the installation of Safety Parameter Display Systems to improve operator response to emergencies at Smolenck Unit 3 in Russia and at South Ukrane Unit 2, Rivnc Unit 3, and Zaporizhzhya in Ukraine. (NN)* ! *Promote U.S. positions and practices in international forums that advocate safe reactor operations. (NN)* ! *Complete a full-scope simulator for Russia's Kalinin plant unit 1. (NN)* ! *Complete an in-depth safety assessment at Russia's Leningrad plant. (NN)* ! *Complete a control and protection system upgrade at Lithuania's Ignalina plant unit 2. (NN)* **NS7-2** [Combined with NS7-1]

NS-7 Improve international nuclear safety. (NN, formerly NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
NS7-3 ASSISTING IN THE SHUTDOWN OF THE CHORNOBYL NUCLEAR POWER PLANT ! *Providing the Chornobyl plant with equipment for dose reduction, nuclear safety monitoring, dust suppression, and industrial safety. (NN)* (SUCCESSFUL) ! *Reaching an agreement with the Ukrainians on Chornobyl Unit 1 defueling. (NN)* (SUCCESSFUL)	**NS7-3 ASSISTING IN THE SHUTDOWN OF THE CHORNOBYL NUCLEAR POWER PLANT** ! *Complete a comprehensive decommissioning engineering survey of Chornobyl Unit 1. (NN)*	**NS7-3** [Combined with NS7-1]

Means & Strategies for FY 2000: In accomplishing its mission, the Department will call upon its existing scientific and engineering expertise and its laboratory facilities. Because of the nature of the many international nuclear safety projects, the human and technological resources employed are by necessity multi-disciplinary, requiring a diverse technology base. The emphasis throughout the international nuclear safety program is close coordination with internal and external customers, to ensure responsiveness to their actual needs.

ENVIRONMENTAL QUALITY

GOAL: Aggressively clean up the environmental legacy of nuclear weapons and civilian nuclear research and development programs, minimize future waste generation, safely manage nuclear materials, and permanently dispose of the Nation's radioactive wastes.

By 2006, the Environmental Management (EM) program intends to complete cleanup at most of its 53 [15] remaining sites. At the 10 sites remaining after 2006, including our five largest sites, treatment will continue for the remaining "legacy" waste streams and management (including stabilization and disposition) of legacy nuclear materials will continue. Even after completing cleanup, the Department will maintain a presence at most sites to ensure that the reduction in risk to human health and the environment is maintained. Such "long-term stewardship" will include passive or active institutional controls and, often, treatment of groundwater over a long period of time.

Achieving our accelerated site completion goals will require the Department to improve productivity and reduce the life-cycle costs of cleanup. The geographic site completion goals, shown in the following site completion graph, are based on EM's most aggressive budget and planning scenarios and assume the maximum possible gains in efficiency. At some of these sites, these goals are extremely ambitious and represent challenges rather than specific commitments.

The Department has established cleanup goals and remedies for each contaminated area through processes involving federal and state laws and other legal agreements. These processes include input from decision makers outside of the Department, such as states, the U.S. Environmental Protection Agency (EPA), and the U.S. Nuclear Regulatory Commission. Environmental remediation activities are based primarily on requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended; the Resource Conservation and Recovery Act (RCRA); and the National Environmental Policy Act (NEPA).

[15] EM's responsibilities include facilities and areas at 113 geographic sites (excluding the 21 sites in the Formerly Utilized Sites Remedial Action Program that transferred to the U.S. Army Corps of Engineers). As of the beginning of FY 1998, 60 geographic sites had been completed and 53 geographic sites (including WIPP which is a disposal site) remained to be cleaned up. During FY 1998, five geographic sites were completed leaving a total of 48 sites to be cleaned up as of the beginning of FY 1999.

The Department will implement a formal integrated management system to more closely align the *Accelerating*

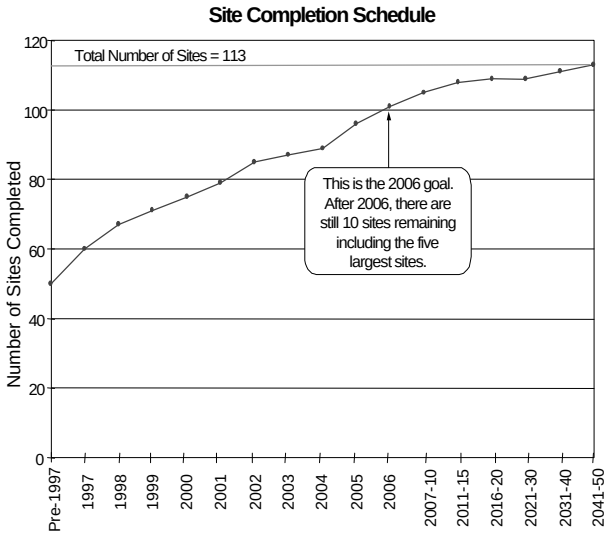

Figure 7: Site Closure Schedule

Cleanup: Paths to Closure planning process with the budget formulation and execution processes. All EM activities are organized by projects, which have a defined scope, schedule and cost that support a defined end state at a specific EM site.

As with the FY 1999 Budget Request, the FY 2000 Budget Request will be organized within the following accounts to emphasize project completion and site closure: **Site Closure** (provides funding for completing cleanup and closing down facilities with no enduring Federal presence on-site, except for stewardship activities); **Site/Project Completion** (includes funding for EM projects and sites that will be completed by 2006, even though there may continue to be a Departmental mission after 2006); and **Post 2006 Completion** (funds projects that are expected to require work beyond 2006).

The FY 2000 Congressional Budget Request and the *Accelerating Cleanup: Paths to Closure* process serve as the basis for the EM commitments in this Performance Plan.

The following table maps the Presidential Budget's Program and Financing (P&F) accounts and program activities to the Department of Energy's offices and decision units. The alignment includes aggregation, disaggregation, and consolidation. The table that follows this one maps DOE decision units to the business line objectives where performance measures and goals are identified.

Presidential Budget Program and Financing (P&F) Accounts and Program Activities		***FY 2000 Budget Request ($M)***	***DOE Office***	***DOE Decision Units***
050 Atomic Energy Defense Activities				
Defense Environmental Restoration and Waste Management				
	Environmental Management	$4,494	EM	Defense Environmental Management
	EH Health Studies	$20	EH	EH Health Studies
Defense Facilities Closure Projects		$1,054	EM	Defense Site Closure Fund
Defense Environmental Management Privatization		$396	EM	Defense Environmental Management Privatization
Defense Nuclear Waste Disposal		$112	RW	Defense Nuclear Waste Fund
Environmental Safety and Health		$92	EH	Environmental Safety and Health (Defense)
270 Energy Supply				
Non-defense Environmental Management				
	Site closure	$221	EM	Site Closure Fund
	Site/project completion	$101	EM	Site/Project Completion Fund
	Post 2006 completion	$19	EM	Post 2006 Completion Fund
Nuclear Waste Disposal		$297	RW	Civilian Nuclear Waste
Uranium Enrichment Decontamination and Decommissioning Fund				
	Environmental restoration and waste management	$210	EM	Environmental restoration and waste management
	Uranium/thorium reimbursements	$30	EM	Uranium/thorium reimbursements
Environmental Safety and Health		$51	EH	Environmental Safety and Health (non-defense)
Energy Supply [16]		$269	NE	Nuclear Energy
Departmental Administration [16]		$8	FM	Field Management

[16] Only a portion of Energy Supply and Departmental Administration resources are applied to the Environmental Quality Business Line.

The following table indicates which budget program/decision units support which of the business line objectives. Resources, in both funds and Full Time Equivalent staff (FTEs), are shown. FTE estimates are for the overall program offices. The funds shown are program totals from DOE's budget request.

DOE Office	**DOE Program/ Decision Unit**	FY 2000 Budget Request ($M)	FTEs	EQ-1 Most Serious Risks First	EQ-2 Clean up	EQ-3 DOE Disposal	EQ-4 Future Pollution	EQ-5 Waste Act Disposal	EQ-6 Reduce Cost	EQ-7 Land Reuse
EM	Defense Site Closure Fund	$1,054	2,697	X	X	X	X		X	X
	Non-defense Site Closure	$211		X	X	X	X		X	X
	Defense Environmental Management	$4,494		X	X	X	X		X	X
	Non-defense Site/Project Completion Fund	$101		X	X	X	X		X	X
	Non-defense Post 2006 Completion Fund	$19		X		X	X			X
	Defense Environmental Management Privatization	$228							X	
EH	Environment, Safety & Health (non-defense)	$51	339	X						
	Environment, Safety & Health (defense)	$92		X						
	EH Health Studies	$20		X						
RW	Nuclear Waste Disposal	$297	196					X		
	Defense Nuclear Waste Fund.	$73						X		
NE	Nuclear Energy [17]	$269	144						X	
FM	Field Management[17]	$8	927							X

[17] Only a portion of Nuclear Energy and Field Management resources are applied to the Environmental Quality Business Line.

EQ-1 Reduce the most serious risks from the environmental legacy of the U.S. nuclear weapons complex first. (EM, EH)

Long-term Strategy: Over the next several years, the Department will identify and fund projects to reduce the most serious risks first and prevent further increases in relative risk at all sites.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
EQ1-1 REDUCING WORKER, PUBLIC, AND ENVIRONMENTAL RISKS ! *Stabilizing and safely storing about 3.7 metric tons of heavy metal of spent nuclear fuel (SNF).* [*Note: SNF data excludes information that is controlled or classified.*] (EM) (PARTIALLY SUCCESSFUL: Behind schedule due to bankruptcy of a subcontractor.)[18] ! *Stabilizing approximately 20,000 kilograms bulk of plutonium residue and approximately 7,000 liters of plutonium solution, and safely storing stabilized material. (EM)* (PARTIALLY SUCCESSFUL: Criticality safety concerns stopped work at Richland for the year and Rocky Flats was also held up by safety issues.) ! *Closing one high level waste storage tank at the Savannah River Site. (EM)* (FULLY SUCCESSFUL)	**EQ1-1 REDUCING WORKER, PUBLIC, AND ENVIRONMENTAL RISKS** ! *Stabilize and safely store approximately 6 metric tons of heavy metal of spent nuclear fuel (SNF). (EM)* ! *Stabilize approximately 33,000 kilograms bulk of plutonium residues, approximately 40 liters of plutonium solution, and 332 containers of plutonium metals/oxides. (EM)*	**EQ1-1 REDUCING WORKER, PUBLIC, AND ENVIRONMENTAL RISKS** ! *Stabilize and safely store approximately 53 metric tons of heavy metal of spent nuclear fuel (SNF). (EM)* ! *Stabilize approximately 38,000 kilograms bulk of plutonium residues, approximately 160 liters of plutonium solution, and 238 containers of plutonium metals/oxides. (EM)* ! *Make disposition ready 910 containers of plutonium metals/oxides. (EM)*

Means & Strategies for FY 2000: The Department will work closely with regulators, the DNFSB, and others to achieve this objective and will prioritize and fund high risk projects, such that risk to the workers, the public, and the environment decreases over time. Protecting the public, the workers, and the environment shall be a priority whenever activities are planned or performed. On his first day as Secretary of Energy, Secretary Bill Richardson stated that the, "safety, health and well-being of our workers and the public is a top priority of the Department."

[18] End-of-year results of FY 1998 Performance Agreement commitments are classified as "FULLY SUCCESSFUL", "SUCCESSFUL", "PARTIALLY SUCCESSFUL", or "UNSUCCESSFUL" for performance judged to be effectively 100% or better, 80-100%, 50-80%, or less than 50% respectively.

EQ-2 Clean up as many as possible of the Department's 53[19] remaining contaminated geographic sites by 2006. (EM)

Long-term Strategies: The Department intends to complete clean up at most of its 53[19] remaining sites by 2006, with the remaining 10 sites (including our 5 largest) scheduled for completion in the post-2006 time frame.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
EQ2-1 ACCELERATE AND COMPLETE GEOGRAPHIC SITE CLEANUP ! *Completing remediation at 6 geographic sites. (EM)* (SUCCESSFUL) ! *Making progress on release site completion: (EM)_* - *Completing about 575 release site assessments.* - *Completing about 280 release site cleanups.* (FULLY SUCCESSFUL) ! *Making progress on facility decommissionings: (EM)* - *Completing about 90 facility decommissioning assessments.* - *Completing about 70 facility decommissionings.* (FULLY SUCCESSFUL) **EQ2-2 & EQ2-3** [Combined with EQ2-1]	**EQ2-1 ACCELERATE AND COMPLETE GEOGRAPHIC SITE CLEANUP** ! *Complete remediation at 3 geographic sites, increasing the total completed to 68 of 113 geographic sites. (This is a milestone of a FMFIA corrective action plan.) (EM)* ! *Complete about 310 release site assessments. (EM)* ! *Complete about 165 release site cleanups. (This will bring the number of completed release site cleanups to about 4,290 out of a total inventory of approximately 9,700 release sites.) (EM)* ! *Complete about 120 facility decommissioning assessments. (EM)* ! *Complete about 80 facility decommissionings. (This will bring the number of completed facility decommissionings to about 530 out of a total inventory of approximately 3,350 facilities.) (EM)* **EQ2-2 & EQ2-3** [Combined with EQ2-1]	**EQ2-1 ACCELERATE AND COMPLETE GEOGRAPHIC SITE CLEANUP** ! *Complete remediation at 3 geographic sites, increasing the total completed to 71 of 113 geographic sites. (EM)* ! *Complete about 760 release site assessments. (EM)* ! *Complete about 200 release site cleanups. (This will bring the number of completed release site cleanups to about 4,490 out of a total inventory of approximately 9,700 release sites.) (EM)* ! *Complete about 345 facility decommissioning assessments. (EM)* ! *Complete about 110 facility decommissionings. (This will bring the number of completed facility decommissionings to about 640 out of a total inventory of approximately 3,350 facilities.) (EM)* **EQ2-2 & EQ2-3** [Combined with EQ2-1]

Means & Strategies for FY 2000: The Department will first focus on reducing any off-site contamination; then on prevention of contamination migration; reduction of on-site contamination; allocation of resources to effectively maintain essential infrastructure support; funding for other essential prudent business management activities; release of facilities and land to the public for beneficial reuse where this is deemed appropriate; and finally, additional characterization efforts to reduce uncertainty at the various sites in regard to eventual cleanup approaches. Cleanup progress is measured by completion of geographic sites where EM is responsible for remediation of contaminants and other material. Interim progress is demonstrated by cleaning up portions of the EM geographic sites, referred to as "Release Sites" and "Facilities". Cleaning up these areas ultimately leads to the completion of the entire geographic site.

[19] Fifty-three geographic sites remained to be cleaned up as of the beginning of FY 1998. This number included the addition of WIPP which is a disposal site. Five geographic sites were completed during FY 1998 (including the revocation of the designation of two UMTRA sites , Belfield and Bowman), leaving a total of 48 sites to be cleaned up as of the beginning of FY 1999.

EQ-3 Safely and expeditiously dispose of waste generated by nuclear weapons and civilian nuclear research and development programs, and make defense high-level radioactive wastes disposal-ready. (EM, RW)

Long-term Strategies: Over the next several years, the Department will accomplish this objective using a strategy that supports the overall Environmental Quality goal to protect the environment, workers, and the public by minimizing exposure to, and eliminating hazards associated with managing radioactive and hazardous wastes. Waste management strategies to accomplish this objective will aim to: (1) reduce inventory levels of the Nation's cold war legacy and newly generated wastes; (2) ensure safe and efficient storage, treatment, and disposal of waste by providing adequate facilities and resources to protect environmental quality; (3) engage regulators and the public to increase cooperation and understanding, and (4) comply with regulatory requirements and safe work practices.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
EQ3-1 OPENING THE WASTE ISOLATION PILOT PLANT ! *Shipping between 388 and 592 cubic meters of transuranic (TRU) waste to WIPP for disposal from three DOE sites (Los Alamos National Laboratory, Rocky Flats Environmental Technology Site, and Idaho National Engineering and Environmental Laboratory). (EM)* (UNSUCCESSFUL: WIPP was ready but litigation stopped shipping of TRU.) **EQ3-2 MAKING DISPOSAL READY AND DISPOSING OF WASTE GENERATED DURING PAST AND CURRENT DOE ACTIVITIES** ! *Disposing of about 4,000 cubic meters of mixed low level waste (MLLW). (EM)* (FULLY SUCCESSFUL) ! *Disposing of about 30,000 cubic meters of low level waste (LLW). (EM)* (FULLY SUCCESSFUL) ! *Producing 200 canisters of high level waste (HLW) at the Defense Waste Processing Facility (DWPF) at the Savannah River Site. (EM)* (FULLY SUCCESSFUL) ! *Producing approximately 88 canisters of HLW at the West Valley Demonstration Project. (EM)* (FULLY SUCCESSFUL)	**EQ3-1 MAKING DISPOSAL READY AND DISPOSING OF WASTE GENERATED DURING PAST AND CURRENT DOE ACTIVITIES** ! *Make disposal ready about 700 cubic meters of TRU waste. (EM)* ! *Ship about 700 cubic meters of TRU waste to WIPP for disposal. (EM)* ! *Dispose of about 15,000 cubic meters of MLLW. (EM)* ! *Dispose of about 73,000 cubic meters of LLW. (EM)* ! *Produce about 200 canisters of HLW at the Defense Waste Processing Facility at the Savannah River Site. (EM)* ! *Produce about 15 canisters of HLW at the West Valley Demonstration Project. (EM)*	**EQ3-1 MAKING DISPOSAL READY AND DISPOSING OF WASTE GENERATED DURING PAST AND CURRENT DOE ACTIVITIES** ! *Make disposal ready about 3,400 cubic meters of TRU waste. (EM)* ! *Ship about 3,400 cubic meters of TRU waste to WIPP for disposal. (This is about 2 percent of the total TRU waste that requires disposal between FY 1998 and FY 2070.) (EM)* ! *Dispose of about 15,000 cubic meters of MLLW. (This completes about 14 percent of the total MLLW that requires disposal between FY 1998 and FY 2070.) (EM)* ! *Dispose of about 79,000 cubic meters of LLW. (This completes about 9 percent of the total LLW that requires disposal between FY 1998 and FY 2070.) (EM)* ! *Produce about 100 canisters of HLW at the Defense Waste Processing Facility at the Savannah River Site. (This completes about 15 percent of the total canisters that will be produced at SRS from FY 1996 to life-cycle completion.) (EM)* ! *Produce about 5 canisters of HLW at the West Valley Demonstration Project. This completes more than 90 percent of the total canisters that will be produced at West Valley from FY 1996 to life-cycle completion. (EM)*

Means & Strategies for FY 2000: Waste management programs will continue to dispose of DOE low-level and mixed radioactive waste primarily at its current disposal facilities although the Department, with stakeholder participation, will consider alternative disposition paths that are more cost-effective while still protective of the public and the environment. Operations will minimize generation of new waste, re-use, and recycle where possible to accomplish pollution prevention goals. In addition, the Department will continue to re-engineer waste management practices and strive to have newly generated wastes disposed as generated.

Waste management activities will ensure safe handling and storage of waste in addition to maximizing isolation to reduce risks. The Department will prepare transuranic waste for disposal at the Waste Isolation Pilot Plant (WIPP) and ship as soon as legal constraints are removed; and continue to prepare high-level waste for disposal in the nation's future deep geologic repository.

The Department will integrate waste management programs across the DOE complex by consolidating waste storage, treatment and disposal facilities to maximize efficiency, reduce environmental risks and costs of operations. Efforts will continue to improve the quality and value of information on the generation, inventory, management, and transportation of DOE waste.

EQ-4 Prevent future pollution. (EM, DP, NE, SC)

Long-term Strategy: Over the next several years, the Department will minimize waste generation at the source as much as technically feasible and economically practicable and eliminate emissions and discharges, giving priority to those waste streams that may present the greatest potential risk to health or the environment.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
EQ4-1 PREVENTING FUTURE POLLUTION ! *Reducing routine waste generation by 40 percent, compared with 1993 waste generation rates. [Data for reporting will be available at the end of calendar year 1998] (EM)* (FULLY SUCCESSFUL) ! *Reducing/avoiding the generation of radioactive, mixed, and hazardous wastes by about 4,000 cubic meters. [Data for reporting will be available at the end of calendar year 1998] (EM)* (FULLY SUCCESSFUL)	**EQ4-1 PREVENTING FUTURE POLLUTION** ! *Reduce routine waste generation by 45 percent based on 1993 waste generation rates. (Data for reporting will be available at the end of calendar year 1999.) (EM)* ! *Implement projects that reduce/avoid the generation of radioactive, mixed, and hazardous wastes by 2,000 cubic meters. (EM)* ! *Reduce by 10 percent the waste resulting from the execution of cleanup, stabilization and decommissioning activities, from the annual planned baseline volumes. (EM)*	**EQ4-1 PREVENTING FUTURE POLLUTION** ! *Reduce routine waste generation by 50% by December 1999, based on 1993 waste generation rates. (EM)* ! *Reduce by 10 percent the waste resulting from the execution of cleanup, stabilization and decommissioning activities, from the annual planned baseline volumes. (EM)*

Means & Strategies for FY 2000: The Department will apply pollution prevention techniques such as material substitution, process modification, segregation/reuse, and recycling, where they would not increase the life cycle cost of the cleanup/stabilization/waste management projects. The Department will expand its pollution prevention goals to the year 2005 and each site will update its triennial pollution prevention plan to reflect new goals by the Spring of 2000. The Department will use Life Cycle Asset Management (LCAM) Order (430.1) to ensure that pollution prevention is designed into all new facilities and major modifications. Headquarters/Operations/Field Offices will be held accountable for implementing site Pollution Prevention Plans and LCAM Agreements. Through an expanded field assessment program, the Department will measure success through continuous improvement and trending towards zero waste generation and emissions.

EQ-5 Dispose of high-level radioactive waste and spent nuclear fuel in accordance with the Nuclear Waste Policy Act as amended. (RW)

Long-term Strategies: Over the next several years, the Department will (1) complete the scientific and technical analyses of the Yucca Mountain site, and if it is determined to be suitable for a geologic repository, obtain a license from t he Nuclear Regulatory Commission; and (2) maintain the capability to initiate plans to transport spent nuclear fuel and high level waste as soon as a Federal facility is designated under the Nuclear Waste Policy Act.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
EQ5-1 CONTINUING WITH YUCCA MOUNTAIN SITE CHARACTERIZATION ! *Completing the viability assessment analyses for licensing and constructing a geologic repository at the Yucca Mountain site. The assessment will consist of four key components: (RW)* - *A design and operational concept of the repository;* - *An assessment of the performance of that concept in the geologic setting;* - *A plan and cost estimate to construct and operate the repository; and* - *A plan and an estimate of the costs to complete a license application.* (FULLY SUCCESSFUL) **EQ5-2 DEVELOPING WASTE ACCEPTANCE AND TRANSPORTATION CAPABILITY** ! *Completing generic, non-site-specific interim storage facility work and addressing long lead-time issues related to storage of waste including design, engineering, and safety analyses. (RW)* (FULLY SUCCESSFUL) ! *Developing a market-driven approach that uses private sector management and operational capabilities to provide waste acceptance, and transportation services. Issuing a revised draft request for proposals. (RW)* (FULLY SUCCESSFUL) ! *Completing a revised Policy and Procedure for implementation of Section 180 of the Nuclear Waste Policy Act. (RW)* (FULLY SUCCESSFUL)	**EQ5-1 CONTINUING WITH YUCCA MOUNTAIN SITE CHARACTERIZATION** ! *Publish a draft Environmental Impact Statement (EIS). The Nuclear Waste Policy Act requires a Final EIS to accompany the site recommendation. (RW)* ! *Complete repository and waste package design inputs for use in total system performance assessment for the repository license application. (RW)* ! *Complete peer review of the total system performance assessment to provide formal, independent evaluation and critique. (RW)* **EQ5-2 DEVELOPING WASTE ACCEPTANCE AND TRANSPORTATION CAPABILITY** ~~! *Develop enhancements and modifications to the Standard Disposal Contract to support procurement of waste acceptance and transportation services.(RW)*~~ [20]	**EQ5-1 CONTINUING WITH YUCCA MOUNTAIN SITE CHARACTERIZATION** ! *Issue a Final Environmental Impact Statement as required by the Nuclear Waste Policy Act. (This also meets a milestone in a FMFIA corrective action plan.) (RW)* ! *Select the reference design for site recommendation and license application. (RW)* ! *Select the reference natural systems models for site recommendation and license application. (RW)* **EQ5-2** [Combined with EQ5-1]

[20] Because of ongoing litigation concerning spent fuel acceptance, this performance goal has been delayed. It will be resumed upon resolution of pending legal issues.

Means & Strategies for FY 2000: The Department will focus the Civilian Radioactive Waste Management Program on the activities necessary to determine the suitability of the Yucca Mountain site as a repository, develop the documentation needed for a Secretarial decision on the Site Recommendation to the President in FY 2001, and on other activities associated with the Federal government's waste acceptance obligations.

EQ-6 Reduce the life-cycle costs of environmental cleanup. (EM, NE)

Long-term Strategies: Over the next several years, the Department will (1) significantly enhance performance, increase efficiency and reduce costs; (2) develop and deploy innovative environmental cleanup, nuclear waste, and spent fuel treatment technologies; and (3) reduce operating costs.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
EQ6-1 REDUCING ENVIRONMENTAL CLEANUP COSTS THROUGH ENHANCED PERFORMANCE ! *Achieving productivity enhancement targets (Targets to be established as part of the Accelerating Clean-up: Focus on 2006). (EM)* (SUCCESSFUL) ! *Increasing the dollar value and/or number of competitively awarded fixed price contracts, including privatization contracts. Continuing the development of the privatization strategy by: (EM)* - *Awarding the Oak Ridge Transuranic Waste Treatment Privatization contract;* - *Authorizing commencement of the Tank Waste Remediation System (TWRS) contract Phase 1B at Hanford Site in Washington; and* - *Awarding the Carlsbad Area Office Contact-Handled Transuranic Waste Transportation Privatization Contract.* (SUCCESSFUL)	**EQ6-1 REDUCING ENVIRONMENTAL CLEANUP COSTS THROUGH ENHANCED PERFORMANCE** ! *Continue the development and implementation of the privatization strategy by: (EM)* - *Commencing Phase II (Design completion and facility construction) of the Idaho National Engineering and Environmental Laboratory (INEEL) Advanced Mixed Waste Treatment Project (AMWTP);* - *Awarding the contract for the INEEL Spent Nuclear Fuel (SNF) Dry Storage Project; and* - *Awarding the contract for the Oak Ridge Waste Disposal Project (Design completion/ construction/operation).*	**EQ6-1 ACHIEVING ENHANCED PERFORMANCE, INCREASED EFFICIENCY AND REDUCED COSTS** ! *Continue the development and implementation of the privatization strategy by:* - *Achieving the Authorization To Proceed decision for the construction and operations phase (Phase B2) of the Tank Waste Remediation System (TWRS) contract at Hanford Site. (EM)*

EQ-6 Reduce the life-cycle costs of environmental cleanup. (EM, NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
EQ6-2 DEVELOPING AND DEPLOYING INNOVATIVE CLEANUP TECHNOLOGIES ! *Accomplishing 49 innovative technology deployments. (EM)* (FULLY SUCCESSFUL) ! *Demonstrating 35 alternative technology systems that meet the performance-specification based needs as identified by the Site Technology Coordinating Groups (STCG). (EM)* (FULLY SUCCESSFUL) ! *Making 40 alternative technology systems available for implementation with full cost and engineering performance data. (EM)* (FULLY SUCCESSFUL) ! *Completing the final Programmatic Environmental Impact Statement for selecting the long-term management strategy for the depleted UF6. (NE)* (SUCCESSFUL)	**EQ6-2 DEVELOPING AND DEPLOYING INNOVATIVE CLEANUP TECHNOLOGIES** ! *Accomplish 60 innovative technology deployments. (EM)* ! *Demonstrate 22 alternative technology systems that meet the performance-specification based needs as identified by the Site Technology Coordination Groups. (EM)* ! *Make 40 alternative technology systems ready for implementation with cost and engineering performance data. (EM)* ! *Complete the demonstration of the electrometallurgical spent fuel treatment technology by the end of FY 1999 using Experimental Breeder Reactor-II (EBR-II) spent nuclear fuel.(NE)* ! *Complete the conversion and disposition of 100 percent of the secondary sodium coolant from the Experimental Breeder Reactor-II and 40 percent of the Fermi reactor sodium coolant in storage at Argonne National Laboratory-West. (NE)* ! *Maintain the Fast Flux Test Facility in a safe, environmentally-compliant standby condition to permit implementation of an anticipated Secretarial decision in FY 1999 to deactivate or pursue potential restart to support a range of national research reactor requirements. (NE)*	**EQ6-2 DEVELOPING AND DEPLOYING INNOVATIVE CLEANUP TECHNOLOGIES** ! *Accomplish 60 [21] innovative technology deployments. (EM)* ! *Demonstrate 30 alternative technology systems that meet the performance-specification based needs as identified by the Site Technology Coordination Groups. (EM)* ! *Make 30 alternative technology systems ready for implementation with cost and engineering performance data. (EM)* ! *Meet all Federal and State safety and environmental requirements for the Fast Flux Test Facility while implementing a Secretarial decision on the facility. (NE)* ! *Complete the draining and processing of EBR-II primary sodium. (NE)* ! *Complete a National Environmental Policy Act (NEPA) review on the use of electrometallurgical technology to treat EBR-II and other sodium-bonded fuel in the Department's problem spent fuel. (NE)* ! *Through the NEPA decision-making process, establish and begin implementing a long-term strategy for the management of the Department's depleted uranium hexafluoride inventories. (NE)*

EQ-6 Reduce the life-cycle costs of environmental cleanup. (EM, NE) (Continued)

[21] A goal of 60 technology deployments is established based on the current rate of deployments. Historically, it has proven difficult to accurately quantify longer-term performance goals for deployments. This is due to the nature of the technology work scope and the variations in timing and magnitude of the deploying program's work scope.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
	! *Meet all commitments made to the Ohio Environmental Protection Agency and the Defense Nuclear Facilities Safety Board to ensure the safety of the Department's inventory of depleted uranium hexafluoride. (NE)*	! *Meet all commitments made to the Ohio Environmental Protection Agency and the Defense Nuclear Facilities Safety Board to ensure the safety of the Department's inventory of depleted uranium hexafluoride. (NE)* ! *Supply quality stable and radioactive isotopes for industrial, research, and medical applications that continue to meet customer specifications and maintain 95 percent on-time deliveries. (NE)* ! *Complete at least 60 percent of the construction of the Los Alamos Target Irradiation Station, which is needed for the production of short-lived isotopes for medical research. (NE)*
EQ6-3 COMPLETING DEACTIVATION OF SURPLUS FACILITIES ! *Completing about 60 surplus facility deactivations. (EM)* (FULLY SUCCESSFUL)	**EQ6-3 COMPLETING DEACTIVATION OF SURPLUS FACILITIES** ! *Complete about 65 surplus facility deactivations. (EM)*	**EQ6-3 COMPLETING DEACTIVATION OF SURPLUS FACILITIES** ! *Completing about 60 surplus facility deactivations. (EM)*

Means & Strategies for FY 2000: The Department will continue to seek "performance enhancements" as a means of reducing the significant costs of the cleanup program. By becoming more cost-efficient, the Department will be able to accelerate cleanup and closure schedules, and thereby lower life-cycle cleanup costs. The Department has established accelerated site closure targets for the Rocky Flats Environmental Technology Site (from 2010 to 2006), Fernald Environmental Management Project (from 2008 to 2005), and Mound (from 2005 to 2004). In *Accelerating Cleanup: Paths to Closure*, the Department identified several ways to enhance performance to improve productivity and/or accelerate site closure:

Application of Technology Deployment -- Introducing less expensive and/or more effective cleanup technologies;

Integration – Identifying better ways to transfer and manage wastes among sites;

Project Sequencing – Completing projects with high "upkeep" costs;

Reducing Support Costs – Applying more funds to cleanup;

Contract Reform – Creating incentives for contractors to improve performance (quality results and accelerated completion), and Lessons Learned – Increasing productivity based on lessons learned.

The Department will also : (1) reduce operating costs by continuing deactivation of surplus nuclear facilities and placing them in a radiologically and industrially safe shutdown condition; (2) reduce the disposition cost of depleted uranium by exploring and developing alternative government uses for the materials; (3) perform depleted uranium hexafluoride cylinder maintenance activities that are protective of workers and the environment; and (4) work in cooperation with other Federal and State agencies to determine acceptable

cleanup strategies and to define appropriate end point criteria for cleanup activities. The Department will conduct facility surveillance and maintenance activities to ensure there is: (1) no degradation of key plant systems; (2) retention of authorized basis and configuration control; (3) maintenance of key staffing, qualifications, and training; and (4) compliance with Federal and State safety and environmental regulations.

EQ-7 Maximize the beneficial reuse of land & facilities and effectively control risks from residual contamination. (EM, FM)

Long-term Strategy: Over the next several years, the Department will, in conjunction with stakeholders, develop comprehensive land use plans for DOE sites that provide information on alternative uses, ownership, environmental requirements, and implementation schedules and ensure environmental remedies remain protective.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
EQ7-1 MAKING DOE LANDS AND FACILITIES AVAILABLE FOR OTHER USES ! *Submitting to Congress a future use plan for DOE sites, and an analysis of related long-term stewardship issues by October 1998. The plan and analysis will include the Hanford Site, Savannah River Site, Rocky Flats Environmental Technology Site, and Idaho National Engineering and Environmental Laboratory. (EM)* (SUCCESSFUL) ! *Initiating disposition of thirty percent of land and facilities identified as excess by the mission justification analysis. (FM)* (SUCCESSFUL)	**EQ7-1 MAKING DOE LANDS AND FACILITIES AVAILABLE FOR OTHER USES** ! *Release a background report on Long-term Stewardship ("Moving from Cleanup to Stewardship") by the second quarter of FY 1999. This report was one of the commitments published in the June 1998 Paths to Closure document. (EM)* ! *Begin the formal study on long-term stewardship pursuant to the 1998 Programmatic Environmental Impact Statement (PEIS) settlement agreement, which requires a public scoping and comment process; and complete the scoping process portion of the study. (EM)* ! *Complete mission justification analysis for land and facilities at 5 of the remaining 15 sites. (FM)*	**EQ7-1 MAKING DOE LANDS AND FACILITIES AVAILABLE FOR OTHER USES** ! *Produce the draft study on long-term stewardship pursuant to the 1998 PEIS settlement agreement by March 31, 2000. (EM)* ! *Complete a disposition schedule for all non-contaminated real property (including facilities), identified in the Facility Information Management System (FIMS) as "excess" as of October 1, 1999 (FM)* **EQ7-2 ENSURING ENVIRONMENTAL REMEDIES REMAIN PROTECTIVE FOR THE LONG-TERM** ! *Continue coordination with the National Academy of Sciences/National Research Council on the release of their analyses on long-term stewardship ("closure"). (EM)* ! *Improve the integration of long-term stewardship issues with project baselines in the revision to "Accelerating Cleanup: Paths to Closure", to include developing baseline information for stewardship at each site. (EM)*

Means & Strategies for FY 2000: The Department will continue to work with state and federal regulatory agencies, as well as Indian tribes, local governments and community organizations on formulating environmental cleanup remedies that consider future land use. The Department will develop a program initiative to accelerate the cleanup of lands by applying technologies to recover useful lands for transfer to the private sector. In addition, the Department will seek to encourage beneficial reuse of land by coordinating with the Environmental Protection Agency (EPA) brown fields initiative and sharing lessons learned with the Department of Defense (DOD) Baseline Realignment and Closure (BRAC) process. The Department will also develop a framework for a long-term stewardship program, including resources for site personnel on data retention, institutional controls and remedy selection consideration.

SCIENCE AND TECHNOLOGY

GOAL: Deliver the scientific understanding and technological innovations that are critical to the success of DOE's mission and the Nation's science base.

The Department, through the programs of the Office of Science (SC), funds basic research in order to advance the fundamental science knowledge base, as well as train future scientists. Research of this type has been supported by the Department of Energy and its predecessors for over 40 years and includes research in:

- basic energy sciences research in materials and chemical sciences, engineering and geosciences, and energy biosciences;
- magnetic fusion energy;
- health and environmental research;
- high energy and nuclear physics;
- computational and technology research in mathematical, informational, and computational sciences.

These research programs build the science and technology base for our Nation's energy security and scientific leadership.

Access to a broad variety of facilities and laboratories is essential to success in our research efforts. The facilities include large accelerators, experimental detectors, and reactors, high-precision instruments, synchrotrons, massively parallel computers, high-capacity networks, and high-resolution microscopes. These facilities are used by a broad base of user groups from universities and industries all over the country and abroad.

The knowledge, techniques, and instruments developed in the diverse programs of the Office of Science contribute to U.S. economic and national defense security, and are used in therapeutic and diagnostic medical applications, electricity generation, and an array of applications in industry and other scientific areas.

The following table maps the Presidential Budget's Program and Financing (P&F) accounts and program activities to the Department of Energy's offices and decision units. The alignment includes aggregation, disaggregation, and consolidation. The next table maps DOE decision units to the business line objectives where performance measures and goals are identified.

Presidential Budget Program and Financing (P&F) Accounts and Program Activities		***FY 2000 Budget Request ($M)***	***DOE Office***	***DOE Decision Units***
250 Energy Programs				
Science				
	High energy physics	$697	SC	High Energy Physics
	Nuclear physics	$343	SC	Nuclear Physics
	Biological and environmental research	$411	SC	Biological & Environmental Research
	Basic energy sciences	$888	SC	Basic Energy Sciences
	Computational and technology research	$199	SC	Computational & Technology Research
	Energy research analyses	$1	SC	Energy Research Analysis
	Multiprogram energy labs--facility support	$21	SC	Multiprogram energy labs--facility support
	Fusion energy sciences	$223	SC	Fusion Energy Sciences
	Program direction	$52	SC	Program Direction
270 Energy Supply				
	Technical Information Management	$9	SC	Technical Information Management
270 Energy Supply [22]		$269	NE	Nuclear Energy

[22] Only a portion of Energy Supply resources are applied to the Science & Technology Business Line.

The following table indicates which budget program/decision units support which of the business line objectives. Resources, in both funds and Full Time Equivalent staff (FTEs), are shown. FTE estimates are for the overall program offices. The funds shown are program totals from DOE's budget request.

DOE Office	**Program/ Decision Unit**	FY 1999 Budget Request ($M)	FTEs	ST-1 Long Term Science	ST-2 Leading-Edge Technologies	ST-3 Management of Science	ST-4 Science Education
SC	High Energy Physics	$697	424	X	X	X	
	Nuclear Physics	$343		X		X	
	Biological & Environmental Research	$411		X	X	X	
	Basic Energy Sciences	$888		X	X	X	
	Computational & Technology Research	$199		X	X	X	
	Energy Research Analyses	$1		X	X		
	Multiprogram Energy labs--Facility Support	$21		X	X		
	Fusion Energy Science Program	$223		X	X	X	
	Program Direction	$52		X	X	X	X
	Technical Information Management	$9			X		
NE	Nuclear Energy [23]	$269	144		X		X

[23] Only a portion of Nuclear Energy resources are applied to the Environmental Quality Business Line.

ST-1 Develop the science that underlies DOE's long-term mission. (SC)

Long-term Strategies: Over the next several years, the Department will (1) conduct relevant, high quality, innovative research that responds to the needs of the DOE mission; (2) provide new insights into the fundamental nature of energy and matter; (3) search for and utilize the best talent from all sources to perform DOE research; (4) develop science to support DOE's participation in energy and other National policy formulations; (5) support emerging sciences that are important to the future of DOE and the Nation, including interdisciplinary research that addresses the Nation's most pressing problems; and (6) leverage research opportunities through science partnerships and pursue international science collaborations.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ST1-1 PURSUING INNOVATIVE RESEARCH RELEVANT TO DOE'S MISSION ! *Maintaining the high quality and relevance of DOE's science as evaluated by annual peer reviews and advisory committees. (SC)* (FULLY SUCCESSFUL)[24] ! *Completing initial clinical trials of Boron Neutron Capture Therapy to evaluate its safety and feasibility as an alternative method of treating cancers that resist conventional methods of treatment. (SC)* (FULLY SUCCESSFUL) ! *Initiating a new Climate Change Technology program that will underpin new opportunities and technologies in carbon capture.(SC)* (FULLY SUCCESSFUL) ! *Advancing the state of human genome research by reducing cost and increasing speed and quality of DNA sequencing, and submitting 20 million subunits of finished human and mouse DNA sequence to publicly accessible databases. (SC)* (FULLY SUCCESSFUL)	**ST1-1 CONDUCTING RELEVANT, HIGH QUALITY, INNOVATIVE RESEARCH THAT RESPONDS TO THE NEEDS OF THE DOE MISSION** ! *Complete sequencing of 30 million subunits and draft sequence of 30 million additional subunits of human DNA for submission to publicly accessible databases. (SC)* ! *Maintain optimum operating schedules at major scientific user facilities to serve thousands of researchers from universities, national laboratories, and industry. (SC)* ! *Complete preparations and begin operation of the newly completed B-factory at the Stanford Linear Accelerator Center and the Tevatron at Fermilab. (SC)*	**ST1-1 CONDUCTING RELEVANT, HIGH QUALITY, INNOVATIVE RESEARCH THAT RESPONDS TO THE NEEDS OF THE DOE MISSION** ! *Complete the sequencing of 50 million subunits of human DNA to submit to publicly accessible databases in FY 2000. (SC)* ! *Maintain the high quality and relevance of DOE's science as evaluated by annual peer reviews and advisory committees. (SC)* ! *Maintain optimum operating schedules at major scientific user facilities to serve thousands of researchers from universities, national laboratories, and industry while operating time lost at such user facilities due to unscheduled downtime is less than 10 percent of the total scheduled possible operating time, on average. (SC)* ! *Keep the development and upgrade of scientific facilities (including experimental stations) on schedule and with in cost, not exceeding 110 percent of estimates. (SC)*

ST-1 Develop the science that underlies DOE's long-term mission. (SC) (Continued)

[24] End-of-year results of FY 1998 Performance Agreement commitments are classified as "FULLY SUCCESSFUL", "SUCCESSFUL", "PARTIALLY SUCCESSFUL", or "UNSUCCESSFUL" for performance judged to be effectively 100% or better, 80-100%, 50-80%, or less than 50% respectively.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ST1-2 FURTHERING OUR KNOWLEDGE OF ENERGY AND MATTER ! *Commencing full operation of all 3 experimental halls at the Thomas Jefferson National Accelerator Facility to explore the structure of atomic nuclei. (SC)* (FULLY SUCCESSFUL) ! *Commencing research in collaboration with international research community, at the new Sudbury Neutrino Observatory (SNO) in Ontario, Canada to understand why neutrino detection from the sun is much less than expected. (SC)* (FULLY SUCCESSFUL)	**ST1-2 PROVIDING NEW INSIGHTS INTO THE FUNDAMENTAL NATURE OF ENERGY AND MATTER** ! *Complete construction and begin operation of the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory. (SC)* ! *Deliver on the 1999 US/DOE commitments to the international Large Hadron Collider project. (SC)*	**ST1-2 PROVIDING NEW INSIGHTS INTO THE FUNDAMENTAL NATURE OF ENERGY AND MATTER** ! *Move the newly upgraded D-Zero and CDF detectors at Fermilab into position in the Main Injector tunnel and begin commissioning in the third quarter of the fiscal year. (SC)* ! *Further the progress on achieving luminosity and operational efficiency for the Tevtron at Fermilab in its new mode of operation with the recently completed Main Injector. (SC)* ! *Advance knowledge from experiments at the Relativistic Heavy Ion Collider to see possible evidence of the predicted quark-gluon plasma; a high temperature, high density state of nuclear matter that may have existed a millionth of a second after the "Big Bang". (SC)* ! *Complete and make available for use via the web a new energy transport code framework, based on modern computing techniques. (SC)* ! *Operate the B-factory at the Stanford Linear Accelerator Center, the Main Injector for the Tevatron at Fermilab, the Thomas Jefferson National Accelerator Facility, and the Relativistic Heavy Ion Collider at Brookhaven National Laboratory, and deliver on the FY 2000 U.S./DOE commitments to the international Large Hadron Collider project. (SC)*

ST-1 Develop the science that underlies DOE's long-term mission. (SC) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ST1-3 IDENTIFYING AND EMPLOYING THE BEST SCIENTIFIC TALENT ! *Establishing partnerships for Academic-Industrial Research (PAIR) Program to enhance opportunities for research partnerships between academic researchers, their students, and industrial researchers. (SC)* (FULLY SUCCESSFUL)	**ST1-3 SEARCHING FOR AND UTILIZE THE BEST TALENT FROM ALL SOURCES TO PERFORM DOE RESEARCH** ! *Complete a search for and name Directors of the Argonne National Laboratory, Fermi National Accelerator Laboratory, and Stanford Linear Accelerator Center. (SC)*	**ST1-3 SEARCHING FOR AND UTILIZE THE BEST TALENT FROM ALL SOURCES TO PERFORM DOE RESEARCH** ! *Continue Partnerships for Academic-Industrial Research where peer reviewed grants are awarded to university researchers for fundamental, high-risk work jointly defined by the academic and industrial research partners.* ! *Begin new funding opportunities in basic plasma sciences and junior plasma physics facility development programs provided through competitive announcements.* ! *Review at least 80 percent of the research projects by appropriate peers and select through a merit-based competitive process.*
ST1-4 PROVIDING SCIENCE TO SUPPORT NATIONAL POLICY MAKING ! *Developing a comprehensive Departmental policy for laboratory technology transfer in order to leverage science and technology for our nation's economic competitiveness with a stronger partnership with the private sector. (SC)* (PARTIALLY SUCCESSFUL: A position paper proposing principles, criteria, and roles and responsibilities for DOE technology partnership activities was prepared and has been circulated. Policy implications have been discussed with the laboratory directors.)	**ST1-4 DEVELOPING SCIENCE TO SUPPORT DOE'S PARTICIPATION IN ENERGY AND OTHER NATIONAL POLICY FORMULATIONS** ! *Determine 70 percent of the DNA sequence of 10 additional microbes with potential use in waste cleanup or energy production. (SC)* ! *Initiate a new joint Biological and Environmental Research-Basic Energy Sciences program in fundamental science that will underpin new opportunities and technologies in carbon capture. (SC)* ! *Continue collaborative efforts with NASA on space science and exploration. (SC)*	**ST1-4 DEVELOPING SCIENCE TO SUPPORT DOE'S PARTICIPATION IN ENERGY AND OTHER NATIONAL POLICY FORMULATIONS** ! *Proceed on the development of the next generation coupled ocean-atmosphere climate model, leading to better information for assessing climate change and variability at regional, rather than global scales. This next generation model will change grid size from the current 300-500 kilometers on a side to less than 200 kilometers on a side. (SC)* ! *Continue collaborative efforts with NASA on space science and exploration. (SC)* ! *Complete the genetic sequencing of over 10 additional microbes with significant potential for waste cleanup and energy production. (SC)*

ST-1 Develop the science that underlies DOE's long-term mission. (SC) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
		! *Develop and implement, in cooperation with Basic Energy Sciences, a comprehensive program within the Climate Change Technology Initiative where the focus areas are those that promise the maximum impact in the area of carbon management in addition to supporting fundamental research that address other diverse aspects of the problem. (SC)*
ST1-5 SUPPORTING RESEARCH COLLABORATIONS IN EMERGING AND INTERDISCIPLINARY AREAS ! *Applying advances in instrument miniaturization, computational data processing, and molecular and structural biology to advance the development of highly sensitive medical imaging systems used in the detection of diseases. (SC)* (FULLY SUCCESSFUL)	**ST1-5 SUPPORTING EMERGING SCIENCES THAT ARE IMPORTANT TO THE FUTURE OF DOE AND THE NATION** ! *Discover new biological structures with more than 60 percent of the new biological structures published in the peer-reviewed literature resulting from data generated as part of the structural biology synchrotron user station program. (SC)* ! *Conduct, with at least 75 patients, Boron Neutron Capture Therapy (BNCT) Research Phase I/II clinical trials at reactor sources with neutrons. (SC)* ! *Initiate change-out of the beryllium reflector at the High Flux Isotope Reactor at Oak Ridge National Laboratory and improvements to the facility's beam tubes and monochromators. (SC)*	**ST1-5 SUPPORTING EMERGING SCIENCES THAT ARE IMPORTANT TO THE FUTURE OF DOE AND THE NATION** ! *Determine the molecular structures of proteins with more than 60 percent of the new structures that are published in the peer reviewed literature resulting from data generated at synchrotron user stations by BER structural biology program. (SC)* ! *Complete Phase I/II clinical trials of BNCT at reactor sources of neutrons for at least 100 patients, and development of an additional medical reactor at McClellan Air Force Base-University of California at Davis. (SC)* ! *Operate the National Spherical Torus Experiment with a national research team demonstrating long pulse (greater than 1 second) operation at plasma currents approaching 1 megampere, a factor of 40 increase over current exploratory level spherical torus experiments. (SC)*

ST-1 Develop the science that underlies DOE's long-term mission. (SC) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ST1-6 LEVERAGING RESOURCES THROUGH INTERNATIONAL COLLABORATIONS ON SCIENCE PROJECTS ! *Signing the international agreement to participate in the construction and management of the Large Hadron Collider accelerator and the two major detectors. (SC)* (FULLY SUCCESSFUL) ! *Completing the memorandum of understanding with the National Science Foundation concerning the management of the U.S. Large Hadron Collider activities. (SC)* (FULLY SUCCESSFUL) ! *Completing and transmitting to Congress a Strategic Plan for U.S. International Collaborations in Fusion Science and Technology Research fulfilling a House Science Committee requirement. (SC)* (FULLY SUCCESSFUL) ! *Reaching an agreement on the first annual program of bilateral fusion activities between U.S. and Korea.* (SC) (FULLY SUCCESSFUL)	**ST1-6 LEVERAGING RESEARCH OPPORTUNITIES** ! *Conduct five intensive operations periods at the Atmospheric Radiation Measurement (ARM) Southern Great Plains site and redeploy an atmospheric radiation and cloud station from the Arctic Ocean to Atqasuk, Alaska. (SC)* ! *Provide advanced simulations of possible climate response to increasing atmospheric concentrations of greenhouse gases at subcontinental spatial scales. (SC)* ! *Restructure the technology program sub-element in the Fusion Energy Science Program to focus on domestic fusion program needs while maintaining strategic participation in international collaborative activities.* [25] *(SC)* <moved from ER-5>	**ST1-6 LEVERAGING RESEARCH OPPORTUNITIES** ! *Coordinate with other federal agencies, Canada and Brazil to maximize national and international capabilities to enhance understanding of the current global carbon dioxide distribution and the role of the terrestrial biosphere in that distribution. (SC)* ! *Develop collaborative partnerships between strong marine sciences research institutions and those with developing capabilities to advance innovative techniques in modern molecular biology to understand the coupling between carbon and nitrogen cycles in costal waters and sediments. (SC)* ! *Make operational three innovative concept exploration experiments in fusion science--The LSX field-reversed configuration and the flow-through Z pinch, both at the University of Washington and the Pegasus quasi-spherical toroidal plasma at the Wisconsin-- providing basic scientific understanding of relevant concept phenomena. (SC)*

[25] The fusion program was moved from the Energy Resources business line based on Congressional budget structure changes.

ST-1 Develop the science that underlies DOE's long-term mission. (SC) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
! *Completing the review of proposals and initiating projects in FY 1998 to design and develop advanced catalysts, electrodes, and membranes, as well as advanced separator plates and high temperature sealants under the Russian-American Fuel Cell Consortium. (PO)* (FULLY SUCCESSFUL) ! *Continuing cooperative research efforts with Russia, begun in 1973, on fundamental properties of matter, fusion energy science, nuclear reactor safety, environmental restoration and nuclear waste management by renewing the existing umbrella Peaceful Uses of Atomic Energy Agreement (PUAE), which will expire December 1998, for 12-18 months and beginning negotiations of a new and expanded PUAE Agreement. (PO)* (PARTIALLY SUCCESSFUL: The Russians did not sign the agreement but MOUs are working.)		! *In cooperation with NASA, NSF, USDA/Forest Service, and the Smithsonian Institution, provide quantitative data on the annual exchange of carbon dioxide between the atmosphere and terrestrial ecosystem from 25 AmeriFlux sites representing major types of ecosystem and land uses in North and Central America. Provide data on environmental factors, such as climate variation, on the net sequestration or release of carbon dioxide and the role of biophysical processes controlling the net exchange. (SC)*

Means & Strategies for FY 2000: The Department will obtain major new fundamental knowledge by fostering and supporting fundamental, innovative peer-reviewed research to create new scientific and engineering knowledge in areas of basic energy sciences, advanced computing research, a science base for the fusion energy option, the fundamental understanding of energy and matter, and the environmental consequences of energy production and use.

ST-2 Deliver leading-edge technologies that are critical to the DOE mission and the Nation. (SC, NE)

Long-term Strategies: Over the next several years, the Department will (1) develop the technologies required to meet DOE's energy, national security, and environmental quality goals; and (2) pursue technology research partnerships with industry, academia and other government agencies and proactively accelerate the transition of technologies to end users.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ST2-1 DEVELOPING DOE MISSION CRITICAL TECHNOLOGIES ! *Establishing cost and schedule baselines for the three components (ATLAS Detector, CMS Detector and LHC Accelerator) of the planned US contribution to the Large Hadron Collider as specified in the DOE/NSF/CERN Agreement. (SC)* (FULLY SUCCESSFUL) ! *Executing a multi-year contract for development of highly efficient radioisotope power systems in support of NASA's future mission requirements. (NE)* (FULLY SUCCESSFUL) ! *Completing 80 percent of the Sandia Hot Cell Facility construction modifications and processing equipment installation activities needed to achieve the facility capability to process 100 percent of the U.S. demand for molybdenum-99. (NE)* (FULLY SUCCESSFUL) ! *Supplying quality stable and radioactive isotopes for industrial, research, and medical applications that continue to meet customer specifications and maintaining 95 percent on-time deliveries in FY 1998 and beyond. (NE)* (FULLY SUCCESSFUL)	**ST2-1 DEVELOPING THE TECHNOLOGIES TO MEET DOE'S ENERGY, NATIONAL SECURITY, AND ENVIRONMENTAL GOALS** ! *Supply quality stable and radioactive isotopes for industrial, research, and medical applications that continue to meet customer specifications and maintain 95 percent on-time deliveries. (NE)* ! *Initiate construction and commissioning of the Los Alamos Target Irradiation Station, to improve isotope quality with greater operating efficiency. (NE)* ! *Complete equipment installation necessary for an emergency backup supply of molybdenum-99, issue a request for proposals to privatize molybdenum-99 production and business activities by May 1999, and after evaluation, award a contract by September 1999 to the most qualified firm. (NE)* ! *Develop the Advanced Computational Testing and Simulation Toolkit so that simulation can be used in place of experiments which are too dangerous, expensive, inaccessible, or politically unacceptable. (SC)*	**ST2-1 DEVELOPING THE TECHNOLOGIES TO MEET DOE'S ENERGY, NATIONAL SECURITY, AND ENVIRONMENTAL GOALS** ! *Complete an Environmental Impact Statement and establish a Record of Decision on whether to proceed to develop a domestic plutonium-238 production capability for future space missions. (NE)* ! *Supply quality stable and radioactive isotopes for industrial, research, and medical applications that continue to meet customer specifications and maintain 95 percent on-time deliveries. (NE)* ! *Complete at least 60 percent of the construction of the Los Alamos Target Irradiation Station, which is needed for the production of short-lived isotopes for medical research. (NE)* ! *Complete privatization activities associated with production and sale of commercial isotopes. (NE)* ! *Implement the Advanced Nuclear Medicine Initiative by providing isotopes or financial assistance for up to five researchers. (NE)*

ST-2 Deliver leading-edge technologies that are critical to the DOE mission and the Nation. (SC, NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
		! *Develop advanced computing capabilities, computational algorithms, models, methods, and libraries, and advanced visualization and data management systems to enable new computing applications to science. (SC)* ! *Continue to fabricate, assemble, and operate premier supercomputer and networking facilities that serve researchers at national laboratories, universities and industry enabling understanding of complex problems and effective integration of geographically distributed teams in national collaborations. (SC)* ! *Continue the Natural and Accelerated Bioremediation Research (NABIR) program support fundamental research in environmental and molecular sciences that will underpin the development of bioremediation for containing hazardous waste and cleaning DOE sites. Site characterization of the first NABIR Field Research Center will proceed, and activities necessary to enable research sample distribution to investigators will commence. (SC)*

ST-2 Deliver leading-edge technologies that are critical to the DOE mission and the Nation. (SC, NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ST2-2 PURSUING PARTNERSHIPS TO DEVELOP AND DEPLOY NEW TECHNOLOGIES ! *Initiating 15 multi-year Laboratory Technology Research projects by April 1998 that address the Department's top priorities for science and technology, and are cost-shared with industry partners. (SC)* (FULLY SUCCESSFUL) ! *Review and select for Phase II follow-on funding approximately 80 Small Business Innovative Research proposals that satisfied proof of concept under Phase I funding, and select approximately 200 proposals for Phase l funding. (SC)* (FULLY SUCCESSFUL)	**ST2-2 PURSUING TECHNOLOGY RESEARCH PARTNERSHIPS** ! *Provide fundamental research in environmental sciences, biology, molecular sciences, and computational modeling that will underpin the cleanup of contaminated sites. (SC)* ! *Complete the initial SC/EM Pilot Collaborative Research Program and, in cooperation with EM, initiate development of the most promising cleanup technologies arising from these projects. (SC)*	**ST2-2 PURSUING TECHNOLOGY RESEARCH PARTNERSHIPS** ! *Initiate about 7 Laboratory Technology Research projects that address the Department's top priorities for science and technology, through cost-shared research partnerships with industry. (SC)* ! *Review and select for Phase II funding approximately 80 Small Business Innovation Research (SBIR) proposals that satisfy proof of concept under Phase I funding. In a separate competition, select about 200 SBIR proposals for Phase I funding. (SC)*

Means & Strategies for FY 2000: The Department will develop the technologies required to meet DOE's energy, national security, and environmental quality goals by partnering with research institutions, universities, and closely coordinating with other federal agencies. The Department will also: (1) develop, demonstrate, test, and deliver advanced radioisotope power systems for space and national security missions; and, (2) develop new or improved isotope products and services that enable medical diagnoses and therapy, and other applications that are in the national interest, and encourage private sector investment in new isotope production ventures and sell or lease facilities and inventories for commercial purposes. The Department's Office of Nuclear Energy, Science and Technology will work with the Office of Science and Oak Ridge National Laboratory to develop a firm operating reactor schedule with early warning indicators to allow for coordination of alternative suppliers, if needed, to maintain on-time isotope deliveries. The Department will also identify, fund, and perform site maintenance, construction upgrade projects, and environmental compliance activities in accordance with DOE, Federal, and State requirements.

ST-3 Improve the management of DOE's research enterprise to enhance the delivery of leading-edge science and technology at reduced costs. (SC)

Long-term Strategies: Over the next several years, the Department will (1) manage the National Laboratories, science-user facilities, and other DOE research providers and research facilities in a more integrated, responsive, and cost-effective way, building on unique core strengths and corresponding roles; (2) design, construct, and operate research facilities in a timely and cost-effective manner; (3) improve the management, dissemination, sharing, and use of scientific and technical information across DOE; and (4) improve peer and program review processes.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ST3-1 MANAGING THE DEPARTMENT'S NATIONAL LABORATORIES AND RESEARCH FACILITIES ! *Completing a facilities roadmap which will determine the needs and provide direction to the scientific facilities through the year 2020. (SC)* (FULLY SUCCESSFUL) ! *Reducing laboratory operating costs by an additional $330 million (relative to FY 1994) without reducing research outputs. This will be applied to the goal of saving $1.4 billion by FY 2000. (SC)* (FULLY SUCCESSFUL) ! *Completing Critical Decision II and issuing the draft Environmental Impact Statement (EIS) to initiate construction of the Spallation Neutron Source. (SC)* (FULLY SUCCESSFUL) ! *Completing the agreed upon ITER Engineering Design Activities and reaching an agreement on whether to continue into the three-year transition phase leading to construction decision. (SC)* (SUCCESSFUL)	**ST3-1 MANAGING THE NATIONAL LABORATORIES, SCIENCE-USER FACILITIES, AND OTHER DOE RESEARCH PROVIDERS AND RESEARCH FACILITIES** ! *Begin Title I design activities, initiate subcontracts and long-lead procurements, and continue R&D work necessary to begin construction activities of the Spallation Neutron Source. (SC)* ! *Complete prototype development of a "virtual laboratory" approach and implement at least three program trial applications. (SC)* ! *Organize a national research team for the National Spherical Torus Experiment (NSTX) project at Princeton Plasma Physics Laboratory, begin experimental operations by June 1999, and complete the project by September 1999. (SC)* ! *Receive from the Program Advisory Committees (PACS), an assessment, of the quality of research and program relevance at major Fusion Energy operating facilities. (SC)*	**ST3-1 MANAGING THE NATIONAL LABORATORIES, SCIENCE-USER FACILITIES, AND OTHER DOE RESEARCH PROVIDERS AND RESEARCH FACILITIES** ! *Continue construction of the Spallation Neutron Source, at cost and timetables as contained in the Critical Decision II agreement, to provide beams of neutrons used to probe and understand the physical, chemical, and biological properties of materials at an atomic level leading to better fibers, plastics, catalysts, and magnets and improvements in pharmaceuticals, computing equipment, and electric motors. (SC)* ! *Continue fabrication of instrumentation for the short-pulse spallation source at the Manual Lujan Jr. Neutron Scattering Center at the Los Alamos Neutron Science Center. (SC)* ! *Commence full operation at three Atmospheric Radiation Measurement sites, providing unique climatological data necessary to improve climate prediction for use in energy policy development. (SC)*

ST-3 Improve the management of DOE's research enterprise to enhance the delivery of leading-edge science and technology at reduced costs. (SC) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
! *Beginning assembly and installation of the National Spherical Tokomak Experiment at Princeton Plasma Physics Laboratory in FY 1998. (SC)* (FULLY SUCCESSFUL) ! *Preserving a U. S. leadership role for the utilization of synchrotron facilities by providing increased user support personnel for beam lines at the National Synchrotron Light Source at Brookhaven National Laboratory (SC).* (FULLY SUCCESSFUL) ! *Making progress at the following new research facilities: (SC)* - *B-factory at Stanford Linear Accelerator Center: begin operations;* - *Main Injector at Fermilab: complete construction and begin commissioning;* - *High Flux Beam Reactor at Brookhaven: Initiate EIS;* - *Joint Genome Institute's Production Sequencing Facility: begin operations; and* - *William R. Wiley Environmental Molecular Sciences Laboratory (EMSL): begin operations.* (FULLY SUCCESSFUL) **ST3-2** [Combined with ST3-1]	! *Accomplish the milestone of the FMFIA corrective action plan to complete corrective actions identified in the DOE Action Plan for Improved Management of Brookhaven National Laboratory. (SC)* **ST3-2** [Combined with ST3-1]	! *Continue Atmospheric Radiation Measurement (ARM) accomplishments by conducting five intensive operations periods at the ARM Southern Great Plains site. Data will be obtained from the second station on the North Slope of Alaska. The third station in the Tropical Western Pacific, on Christmas Island, will become operational. (SC)* ! *Operate the DIII-D Tokamak facility to test the feasibility of using increased radio frequency heating power and improved power exhaust capabilities to extend the pulse length of advanced operating modes, a requirement for future fusion energy sources. (SC)* ! *Provide accountability for at least 95 percent of the required deliverables resulting from the Department's direct contract R&D agreements through the Technical Information Monitoring System (TIMS). (SC)* **ST3-2** [Combined with ST3-1]

ST-3 Improve the management of DOE's research enterprise to enhance the delivery of leading-edge science and technology at reduced costs. (SC) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ST3-3 MANAGING THE DISSEMINATION OF SCIENTIFIC AND TECHNICAL INFORMATION ! *Negotiating and implementing an agreement with the U.S. Government Printing Office to provide electronic public access to over 25,000 full-text reports containing scientific and technical information through the DOE Information Bridge. (SC)* (FULLY SUCCESSFUL)	**ST3-3 IMPROVING THE MANAGEMENT, DISSEMINATION, SHARING, AND USE OF SCIENTIFIC AND TECHNICAL INFORMATION ACROSS DOE** ! *Conduct a user satisfaction survey to demonstrate that at least 75 percent are satisfied or very satisfied with our computer facilities and networks. (SC)* ! *Implement a common distributed electronic infrastructure across DOE that effectively provides researchers and the public timely access to the Department's scientific and technical information. (SC)* ! *Implement streamlined policies and procedures for managing the Department's scientific and technical information, using decentralized sources in a cost effective and efficient manner. (SC)*	**ST3-3 IMPROVING THE MANAGEMENT, DISSEMINATION, SHARING, AND USE OF SCIENTIFIC AND TECHNICAL INFORMATION ACROSS DOE** ! *Meet 75 percent of the requirements of computer facilities and networks users. (SC)* ! *Continue to make available electronic journals at the desktop, and implement tools to facilitate electronic assess to DOE's scientific and technical information. (SC)* ! *Link information resources throughout the DOE complex to allow access and use via a single user inquirer, and capitalize on bibliographic information and search tools to facilitate access to full-text journal literature. (SC)*
ST3-4 IMPROVING THE EVALUATION PROCESS FOR DOE'S RESEARCH PROGRAMS ! *Having programs reviewed by independent advisory committees to analyze issues and recommend research direction, specifically completion by the: (SC)* - *Energy Science Advisory Committee, of a review of the advanced fusion materials program by September 1998, and* - *High Energy Physics Advisory Panel, of a Plan for the Future of U.S. High Energy Physics.* (FULLY SUCCESSFUL)	**ST3-4 IMPROVING PEER AND PROGRAM REVIEW PROCESSES** ! *Maintain high scientific quality in the Energy Research Program as judged by the Program Advisory Committees. (SC)* ! *Receive from the National Research Council, an assessment, of the quality of science in the Fusion Energy Sciences research programs. (SC)*	**ST3-4 IMPROVING PEER AND PROGRAM REVIEW PROCESSES** ! *Maintain high scientific quality in the Energy Research Program as judged by the Program Advisory Committees. (SC)*

Means & Strategies for FY 2000: The Department will manage the National Laboratories, scientific-user facilities, and other DOE research providers and research facilities in a more integrated, responsive, and cost-effective way, building on unique core strengths and corresponding roles. It will plan for, construct and build premier research facilities that will serve

researchers at universities, national laboratories, and industrial laboratories that advance the acquisition of scientific knowledge.

ST-4 Use DOE assets as part of an Administration-wide effort to advance the Nation's science education and literacy. (SC, NE)

Long-term Strategies: Over the next several years, the Department will (1) develop and promote technologies and programs that deliver information and contribute to learning in science, math, engineering and technology, and in general, expand access to DOE's technical information; and (2) leverage DOE's human and physical research infrastructure, working with the National Science Foundation and other Federal agencies, to promote science awareness, enable advanced educational research opportunities, build capabilities at educational institutions, and improve educational opportunities for diverse groups.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ST4-1 CONTRIBUTING TO THE NATION'S SCIENCE AND MATH EDUCATION AND PROMOTING SCIENCE AWARENESS ! *Expanding sponsorship of collaborations for local and regional science awareness events. (SC)* (FULLY SUCCESSFUL) ! *Supporting young outstanding scientists through: (SC)* - *Department's minority colleges and universities (MC&U) program - support for at least teams of faculty and students;* - *Hollaender Distinguished post doctoral fellowship program - support for at least eight postdoctoral students;* - *Multi-agency Significant Opportunities in Atmospheric Research and Science (SOARS) Program - support for at least two students;* - *Continuing the Departmental award program for Junior investigators in Plasma Science; and* - *Department's outstanding Junior Investigator program which provides research opportunities for early-career high energy physicists.* (FULLY SUCCESSFUL)	**ST4-1 DEVELOPING AND PROMOTING TECHNOLOGIES AND PROGRAMS THAT DELIVER INFORMATION AND CONTRIBUTE TO LEARNING SCIENCE, MATH, ENGINEERING AND TECHNOLOGY** ! *Provide web-based access to energy-related scientific and technical information obtained by DOE via interagency, U.S. businesses and industry, and international agreements, exchanges, and partnerships. (SC)* ! *Continue to make 2 to 10 appointments each in the Biological and Environmental Research program's Alexander Hollander Distinguished Post Doctoral Fellowship; the multi-agency SOARS Program (Significant Opportunities in Atmospheric Research and Science) for outstanding Hispanic, Native American, and African American students in the atmospheric and related sciences. (SC)* ! *Initiate a Significant Opportunities Program in the broader sciences of global change for outstanding undergraduate and graduate students. (SC)*	**ST4-1 DEVELOPING AND PROMOTING TECHNOLOGIES AND PROGRAMS THAT DELIVER INFORMATION AND CONTRIBUTE TO LEARNING SCIENCE, MATH, ENGINEERING AND TECHNOLOGY** ! *Establish customer feedback mechanisms to assess and improve DOE's information program and related products and services, and partner with other government and private sector entities to improve the ease-of- use of systems. (SC)* ! *Continue The Global Change Research Education Program will continue to support graduate and undergraduate students conducting DOE-related global change research. It will continue to participate in the multi-agency "Significant Opportunities in Atmospheric Research and Science" Program (SOARS). (SC)* ! *Make 4 to 10 appointments in both the BER Alexander Hollaender Distinguished Post Doctoral Fellowship Program and the Historical Black Colleges and Universities Faculty and Student Research Programs for research across all areas of the BER program. (SC)*

ST-4 Use DOE assets as part of an Administration-wide effort to advance the Nation's science education and literacy. (SC, NE) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
ST4-2 [Combined with ST4-1]	! *Support U.S. universities' nuclear energy research and education capabilities by: (NE)* - *Providing fresh fuel to all university reactors requesting this service;* - *Funding at least 20 universities with research reactors for reactor upgrades and improvements;* - *Partnering with 19 or more private companies to fund DOE/Industry Matching Grants Programs for universities;* - *Increasing the funding for Reactor Sharing by 40 percent over FY 1998, enabling each of the 26 schools involved in the program to improve the use of their reactors for teaching, training, and education within the surrounding community.* ! *Attract outstanding U.S. students to pursue nuclear engineering degrees by: (NE)* - *Increasing the number of fellowships from 14 to 22;* - *Increasing the number of Nuclear Engineering Education Grants from 19 to over 40;* -- *Providing summer on-the-job training to 29 junior and senior nuclear engineering scholarship recipients.* **ST4-2** [Combined with ST4-1]	! *Support U.S. universities' nuclear energy research and education capabilities by:(NE)* - *Providing fresh fuel to all university reactors requesting this service;* - *Funding at least 23 universities with research reactors for reactor upgrades and improvements;* - *Partnering with 17 or more private companies to fund DOE/Industry Matching Grants Programs for universities;* - *Increasing the funding for Reactor Sharing by 20 percent over FY 1998, enabling each of the 26 schools involved in the program to improve the use of their reactors for teaching, training, and education within the surrounding community.* ! *Attract outstanding U.S. students to pursue nuclear engineering degrees by: (NE)* - *Providing 18 fellowships;* - *Increasing the number of Nuclear Engineering Education Grants to 45 existing and new grants;* -- *Providing summer on-the-job training to 25 junior and senior nuclear engineering scholarship recipients.* **ST4-2** [Combined with ST4-1]

Means & Strategies for FY 2000: The Department will develop and promote technologies and programs that deliver information and contribute to learning in science, math, engineering and technology, and in general expand access to DOE's technical information. The Department will also support and promote university, college, and pre-college technology programs that deliver information and contribute to learning in nuclear science and engineering education, enable advanced educational research opportunities, build capabilities at educational institutions, and improve educational opportunities for diverse groups.

CORPORATE MANAGEMENT

GOAL: The Department of Energy will strive to demonstrate organizational excellence in its environment, safety and health practices, in its communication and trust efforts, and in its corporate management systems and approaches.

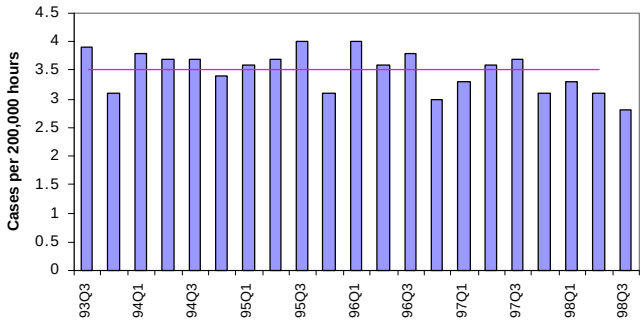

Figure 8: DOE's Total Recordable Case Rate under OSHA Requirements (Industry average is 7.1)

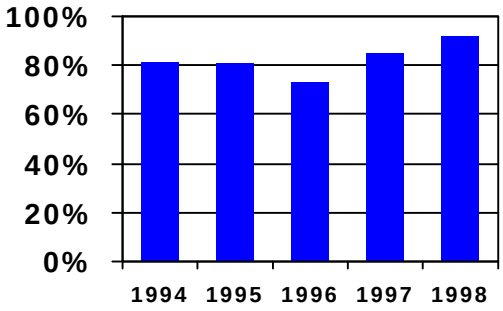

Figure 9: Percentage of DOE's Contracts Awarded Competitively (in contract dollars)

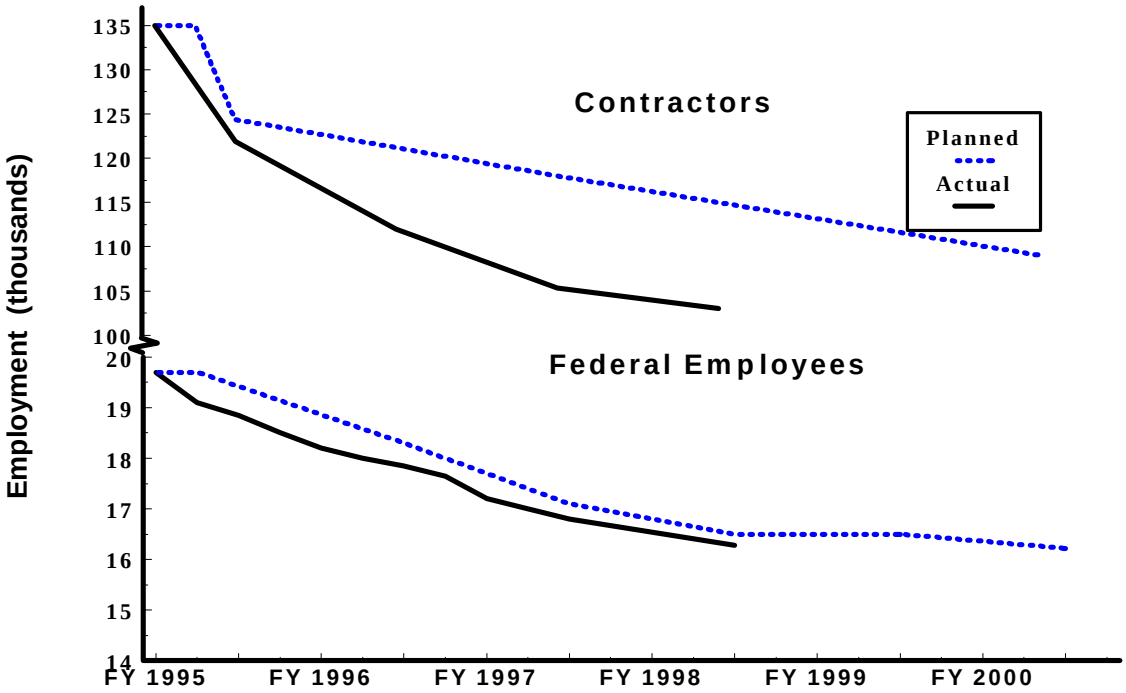

Figure 2: DOE's Human Resources (includes PMAs and FERC)

The following table maps the Presidential Budget's Program and Financing (P&F) accounts and program activities to the Department of Energy's offices and decision units. The alignment includes aggregation, disaggregation, and consolidation. The table that follows this one maps DOE decision units to the business line objectives where performance measures and goals are identified.

Presidential Budget Program and Financing (P&F) Accounts and Program Activities		***FY 2000 Budget Request ($M)***	***DOE Office***	***DOE Decision Units***
Departmental Administration				
Departmental Administration				
	Office of Policy	$21	PO	Policy Office
	Chief Financial Officer	$23	CFO	Chief Financial Officer
	Congressional and Intergovernmental Affairs	$5	CI	Congressional and Intergovernmental Affairs
	General Counsel	$21	GC	General Counsel
	Office of the Secretary	$5	S1	Office of the Secretary
	Board of Contact Appeals	$1	HG	Hearings and Appeals
	Management and Administration	$115	MA	Management and Administration
	Field Management	$8	FM	Field Management
	Economic Impact and Diversity	$7	ED	Economic Impact and Diversity
	Office of Public Affairs	$4	PA	Public Affairs
	Contract Reform and Privatization	$3	PC	Contract Reform and Privatization
Economic Regulation		$2	HG	Hearings and Appeals
Office of the Inspector General		$30	IG	Inspector General
270 Energy Supply				
	Oak Ridge Landlord	$12	FM	Oak Ridge Landlord
	Field Operations	$102	FM	Field Operations
050 Other Defense Activities				
	Hearings and Appeals	$3	HG	Hearings and Appeals
Non-defense Environmental Management [26]		$221	EM	Site Closure Fund
Energy Supply [26]		$51	EH	Environment, Safety & Health
Other Defense Activities [26]		$92	EH	Environment, Safety & Health (defense)
		$748	NN	Nonproliferation and National Security

[26] Only a portion of Non-defense Environmental Management and Other Defense Activities resources are applied to the Corporate Management Business Line.

The following table indicates which budget program/decision units support which of the business line objectives. Resources, in both funds and Full Time Equivalent staff (FTEs), are shown. FTE estimates are for the overall program offices. The funds shown are program totals from DOE's budget request.

DOE Office	**DOE Program/ Decision Unit**	FY 2000 Budget Request ($M)	FTEs	CM-1 Safety & Health	CM-2 Neighbor & Partner	CM-3 Efficient & Effective	CM-4 Business Practices	CM-5 Info Tech	CM-6 Eval-uation
PO	Policy	$21	120			X			
CFO	Chief Financial Officer	$23	208			X	X		X
CI	Congressional and Intergovernmental Affairs	$5	40		X				
GC	General Counsel	$21	164			X			
S1	Office of the Secretary	$5	40	X	X				X
HG	Board of Contract Appeals	$1	46				X		
	Hearings and Appeals (Other Defense Activities)	$3					X		
	Hearings and Appeals (Economic Regulations)	$2					X		
MA	Management and Administration	$115	593	X	X	X		X	
FM	Field Management	$8	927	X	X	X			
	Oak Ridge Landlord	$12		X	X	X			
	Field Operations	$102		X	X	X			
ED	Economic Impact and Diversity	$7	42		X	X			
PA	Public Affairs	$4	31		X				
IG	Inspector General	$30	257						X
CP	Contract Reform and Privatization	$3	7				X		
EM	Non-defense Environmental Management [27]	$211	2,697		X				
EH	Environment, Safety & Health (defense) [27]	$92	339	X					
EH	Environment, Safety & Health [27]	$51		X					
NN	Nonproliferation and National Security [27]	$748	374		X				

Strategic objective CM-3 has been broken up into four objectives to provide appropriate emphasis to the efforts of contract reform, information technology, etc. The original strategies have been maintained as follows:

Original CM-3 Strategy:	New Location/Objective:
CM3-1, 3, 4, & 7	CM3-1, 2, 3, 4
CM3-2 & 5	CM4-1, 2
CM3-6	CM5-1
CM3-8	Moved to NS-3
CM3-9	CM6-1

[27] Only a portion of EM , EH, and NN resources are applied to the Corporate Management Business Line.

CM-1 Ensure the safety and health of the DOE workforce and members of the public, and the protection of the environment in all Departmental activities. (EH, ED, MA)

Long-term Strategies: Over the next several years, the Department will (1) integrate and embed sound environment, safety, and health (ES&H) management practices into the performance of DOE's day-to-day work; (2) clearly identify and fund ES&H priorities and ensure resources are appropriately spent on those priorities; (3) ensure that all DOE employees are appropriately trained and technically competent commensurate with their ES&H responsibilities; and (4) work with the Nuclear Regulatory Commission and the Occupational Safety and Health Administration to evaluate the costs and benefits of independent external regulation of safety and health.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals

CM1-1 INSTITUTING A SOUND ES&H CULTURE	**CM1-1 INSTITUTING A SOUND ES&H CULTURE**	**CM1-1 INSTITUTING A SOUND ES&H CULTURE**
! *Preventing fatalities, serious accidents, and environmental releases at Departmental sites.(EH)* (SUCCESSFUL)[28] ! *Initiating Integrated Safety Management Systems at all 10 high priority facilities by April 1998. (EH)* (FULLY SUCCESSFUL) ! *Completing documentation of ES&H roles and responsibilities for all appropriate DOE offices and sites by July 1998. (EH)* (PARTIALLY SUCCESSFUL: Potential conflicts took until after FY 1998 to be resolved.) ! *Publishing guidance for incorporating environmental justice principles into the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) implementation process. (EH/ED)* (SUCCESSFUL)	! *Prevent fatalities, serious accidents, and environmental releases at Departmental sites. (EH)* ! *Implement Integrated Safety Management Systems in all major management and operations contracts. (EH)* ! *Provide expanded access to information on health related risks from operating our facilities to ensure that minority and low-income populations, which may be disproportionately adversely impacted by DOE facilities, understand the Department's environmental justice goals and strategies. (ED)* ! *Conduct oversight special reviews, assessments, evaluations, and inspections of such topics as emergency management, safety management, accidents, and safeguards and security. (EH)* ! *Prepare a draft Department of Energy implementation plan for the Administration's Clean Water Initiative. (EH)*[29]	! *Establish Departmental goals that ensure a positive trend in preventing fatalities, serious accidents, and environmental releases at Departmental sites. (EH)* ! *Through independent oversight, provide information and analysis of the effectiveness, vulnerabilities, and trends of the Department's environment, safety, health, and safeguards and security policies and programs to the Secretary and senior line management. (EH)* ! *Provide medical screening to all DOE workers formerly exposed to beryllium during their employment at DOE facilities. (EH)* ! *Develop a stronger, more coherent public health agenda at and surrounding DOE sites. (EH)* ! *Accomplish the milestone of the FMFIA corrective action plan to complete the nuclear safety standards upgrade project. (EH)*

[28] End-of-year results of FY 1998 Performance Agreement commitments are classified as "FULLY SUCCESSFUL", "SUCCESSFUL", "PARTIALLY SUCCESSFUL", or "UNSUCCESSFUL" for performance judged to be effectively 100% or better, 80-100%, 50-80%, or less than 50% respectively. Concerning this specific measure, DOE had one work-related fatality during FY 1998. However, DOE's work-related fatality record for FY 1998 was the lowest rate since FY 1994 and was therefore considered "SUCCESSFUL".

[29] Adds an Administration priority announced in FY 1998.

CM-1 Ensure the safety and health of the DOE workforce and members of the public, and the protection of the environment in all Departmental activities. (EH, ED, MA) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
! *Through independent oversight, provide information and analysis of the effectiveness, vulnerabilities, and trends of the Department's environment, safety, health, and safeguards and security policies and programs to the Secretary and senior line management. (EH)* (FULLY SUCCESSFUL) ! *Completing an additional four needs assessments to continue building the basis for a more detailed program of medical surveillance, in order to address the health risks to former DOE workers. (EH)* (FULLY SUCCESSFUL) **CM1-2 ENSURING DOE PROGRAMS APPROPRIATELY ADDRESS ES&H PRIORITIES** ! *Beginning to annually monitor and report on ES&H expenditures and improve related internal controls. (EH)* (FULLY SUCCESSFUL) **CM1-3 ENSURING EMPLOYEES ARE QUALIFIED IN THEIR ES&H RESPONSIBILITIES** ! *Making progress on implementing the Technical Qualifications Program, by increasing the percentage of employees who are certified from 65% in FY 1997 to 75% in FY 1998, towards a goal of 90% of the 1750 covered employees by FY 2000. (MA)* (SUCCESSFUL)	**CM1-2** [combined with CM1-1] **CM1-3 ENSURING EMPLOYEES ARE QUALIFIED IN THEIR ES&H RESPONSIBILITIES** ! *Improve Federal technical workforce capabilities at defense sites by implementing the FY 1999 milestones of the Revised Implementation Plan for DNFSB Recommendation 93-3. (MA)*	! *Implement the environmental justice philosophy into DOE's operational activities by: (ED)* - *achieving at least 15 percent increased level of community interaction at DOE's public meetings over 1998 participation,* - *developing specific criteria for evaluating effective implementation of environmental justice principles of DOE's M&O Contractors,* - *achieving at least 10 percent increased clean-up of hazardous wastes in communities impacted by DOE's operations over 1999 levels.* **CM1-2** [combined with CM1-1] **CM1-3 ENSURING EMPLOYEES ARE QUALIFIED IN THEIR ES&H RESPONSIBILITIES** ! *Improve Federal technical workforce capabilities at defense sites by implementing the FY 2000 milestones of the Revised Implementation Plan for DNFSB Recommendation 93-3. (MA)*

CM-1 Ensure the safety and health of the DOE workforce and members of the public, and the protection of the environment in all Departmental activities. (EH, ED, MA) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
CM1-4 INVESTIGATING FEASIBILITY OF INDEPENDENT EXTERNAL OVERSIGHT OF SAFETY AND HEALTH AT DOE SITES ! *Conducting three NRC/DOE pilot projects to assess the DOE facilities against the standards that NRC believes would be appropriate to ensure radiological safety. (EH)* (FULLY SUCCESSFUL)	**CM1-4 INVESTIGATING FEASIBILITY OF INDEPENDENT EXTERNAL OVERSIGHT OF SAFETY AND HEALTH AT DOE SITES** ! *Complete the ongoing pilot program which assesses the DOE facilities against the standards that the NRC believes would be appropriate to ensure radiological safety. (EH)*	**CM1-4 INVESTIGATING FEASIBILITY OF INDEPENDENT EXTERNAL OVERSIGHT OF SAFETY AND HEALTH AT DOE SITES** ! *Support regulatory transition of legislatively designated sites, accomplish necessary planning for appropriate classes of DOE facilities to be regulated, and report to Congress on the status of regulatory transition. (EH)*

Means & Strategies for FY 2000: The Department will continue to monitor the health of its workforce, and where necessary, take steps to intervene where adverse health impacts are identified. The Department, through its ongoing worker health surveillance programs, has identified that the rate of chronic beryllium disease (CBD) among beryllium-exposed employees has not declined over time despite the fact that the Department facilities have operated within existing occupational exposure limits. In response to these findings, DOE has drafted a Notice of Proposed Rulemaking establishing a DOE-wide Chronic Beryllium Disease Prevention Program which will be implemented during FY 2000. In addition, the DOE has embarked on a program to provide medical screening to all DOE workers formerly exposed to beryllium during their employment at DOE facilities to identify both sensitization to beryllium and CBD. Under this program, periodic follow-up surveillance will be provided to those found to be sensitized. By 2000, this program will be implemented at all 20 DOE sites where workers were exposed to beryllium.

In conjunction with Department of Health and Human Services (DHHS), developing a stronger, more coherent public health agenda at and surrounding DOE sites that is responsive to worker and community health concerns, leads to a clear understanding of the health impacts of DOE operations, and results in improved health protection and prevention for workers and communities.

The Department , NRC, OSHA, and other affected agencies will work with Congress to establish a plan to externally regulate safety and health at appropriate classes of DOE facilities, with a transition period of 5 to 10 years after the enactment of enabling legislation, while maintaining a robust internal safety and health management program.

CM-2 As a good neighbor and public partner, continually work with customers and stakeholders in an open, frank, and constructive manner. (MA, ED, FM, EM, NN, CI, S1)

Long-term Strategies: Over the next several years, the Department will (1) foster strong partnerships with neighboring DOE communities, regulators, and other stakeholders to determine priorities and solutions; (2) increase customer and public awareness of DOE's mission areas by improving the quality, timeliness, and sufficiency of information disseminated on the Department's functions, successes, lessons learned, and future activities; and (3) increase openness with the public by prudently declassifying information about the Department's activities while maintaining a balance with the Nation's security.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
CM2-1 INVOLVING STAKEHOLDERS IN THE POLICY-MAKING ! *Performing an analysis of public participation training needs at all 11 Operations/Field Offices, and initiating a public participation training program for Headquarters and field managers to enhance stakeholder involvement in DOE decisions. (EM)* (FULLY SUCCESSFUL) ! *Conducting a series of regional and national stakeholder workshops to increase public involvement in crosscutting EM issues. The workshops will be attended by advisory board members, state and local governments, Native American Tribes, and other stakeholders across the country.(EM)* (SUCCESSFUL) ! *Responding to an estimated total of 500,000 public requests for information and documents from the Center for Environmental Management Information within an average of two business days per request. (EM)* (FULLY SUCCESSFUL)	**CM2-1 INVOLVING STAKEHOLDERS IN THE POLICY-MAKING** ! *Conduct stakeholder meetings to increase public involvement in crosscutting environmental quality issues. The meeting participants will include advisory board members, state and local governments, Native American Tribes, and other stakeholders across the country. (EM)* ! *Conduct "Communicating with the Public" training sessions for DOE managers. (EM)* ! *Respond to an estimated total of 500,000 public requests for information and documents from the Center for Environmental Management Information within an average of two business days per request. (EM)*	**CM2-1 INVOLVING STAKEHOLDERS IN THE POLICY-MAKING** ! *Conduct stakeholder meetings to increase public involvement in crosscutting environmental quality issues. The meeting participants will include advisory board members, state and local governments, Native American Tribes, and other stakeholders across the country. (EM)* ! *Respond to an estimated total of 500,000 public requests for information and documents from the Center for Environmental Management Information within an average of two business days per request. (EM)*

CM-2 As a good neighbor and public partner, continually work with customers and stakeholders in an open, frank, and constructive manner. (MA, ED, FM, EM, NN, CI, S1) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
CM2-2 IMPROVING COMMUNICATIONS WITH CUSTOMERS AND THE PUBLIC ! *Reducing the Freedom of Information Act backlog by 15 percent and the average case age by 25 percent. (MA)* (SUCCESSFUL) ! *Improving the quality and volume of information on DOE's World Wide Web site as indicated by user-interest through numbers of home page visits. (MA)* (FULLY SUCCESSFUL)	**CM2-2 IMPROVING COMMUNICATIONS WITH CUSTOMERS AND THE PUBLIC** ! *Reduce the Freedom of Information Act backlog by 10 percent and the average case age by 10 percent over the previous year. (MA)* ! *Improve the quality and volume of information on the DOE's World Wide Web site and demonstrate user-interest through a higher number of home page visits (hits) per year. (MA)*	**CM2-2 IMPROVING COMMUNICATIONS WITH CUSTOMERS AND THE PUBLIC** ! *Reduce the Freedom of Information Act backlog by 10 percent and the average case age by 10 percent over the previous year. (MA)*
CM2-3 INCREASING OPENNESS WITH THE PUBLIC ! *Reviewing for possible declassification and release, 3,950,000 pages of DOE documents under Executive Order 12958 bringing the total pages reviewed to 8,460,000 which is 60 percent of the DOE's historically significant records 25 years or older. (NN)* (PARTIALLY SUCCESSFUL: Unanticipated Congressional budget reductions and application of resources to litigation caused less than intended results.) ! *Implementing "National Security Information, Classification and Declassification"(Title 10 Code of Federal Regulations, Part 1045) through conducting two on-site reviews of other agency Restricted Data programs. (NN)* (UNSUCCESSFUL: "Outreach Coordinator" resigned.)	**CM2-3 INCREASING OPENNESS WITH THE PUBLIC** ! *Continue reviewing DOE documents for possible declassification and release of those that no longer need to be withheld for security purposes.*[30] *(NN)* ! *Implement the fundamental Classification Policy Review recommendations and issue 40 classification guides in the streamlined format containing the updated guidance. (NN)* ! *Implement 10 CFR 1045 through reviewing 100 percent of other agency classification guides submitted, and by conducting five on-site reviews of other agency Restricted Data Programs. (NN)*	**CM2-3 INCREASING OPENNESS WITH THE PUBLIC** ! *Continue reviewing DOE documents for possible declassification and release of those that no longer need to be withheld for security purposes. (NN)* ! *Implement the fundamental Classification Policy Review recommendations and issue 40 classification guides in the streamlined format containing the updated guidance. (NN)*

[30] The National Defense Authorization Act for FY 1999 Section 3161 (the Kyl amendment) creates requirements for review of classified documents that make it impossible to make any estimates for specific number of pages to be reviewed.

CM-2 As a good neighbor and public partner, continually work with customers and stakeholders in an open, frank, and constructive manner. (MA, ED, FM, EM, NN, CI, S1) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
	CM2-4 DEVELOPING A PUBLIC HEALTH AGENDA FOR DOE SITES ! *Issue an initial status report on the development of a public health agenda by December 31, 1998 and a final public health agenda for each site, which reflects customer and stakeholder input, shall be issued by September 30, 1998. (EH)*	

Means & Strategies for FY 2000: The Department will continue reviewing classified records for possible release using revised classification guides and continue improvements to the processing of FOIA requests.

CM-3 Use efficient and effective corporate management systems and approaches to guide decision making, streamline and improve operations, align resources and reduce costs. (CFO, PO, MA, ED, GC)

Long-term Strategies: Over the next several years, the Department will (1) improve decision-making, ensure accountability, maximize departmental resources, and achieve intended results by corporately managing the Department's mission, functions, and activities; (2) continue to streamline and improve operations, further reduce overhead expenditures, and facilitate additional workforce reductions while aiding affected employees and communities; (3) implement quality management principles, value diversity, and continue to improve human resources systems and practices; and (4) promote the effective, efficient, and economical operation of the business lines through audits, investigations, inspections, and other reviews. (These were strategies 1,3,4, and 7.)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
CM3-1 IMPROVING MANAGERIAL PERFORMANCE AND ACCOUNTABILITY ! *Utilizing mechanisms such as senior level corporate and business line management councils, a DOE chief operating officer, and performance-based management to foster strategic direction, enhance programmatic integration, and improve headquarters and field operations. (PO)* (PARTIALLY SUCCESSFUL: Cannot demonstrate enhancements.) ! *Establishing annual Secretarial Officer Performance Agreements that are linked to the Secretary's Performance Agreement with the President. (PO)* (PARTIALLY SUCCESSFUL: Although some agreements executed, their effectiveness is questionable.) ! *Expanding the Corporate Executive Information System to provide senior management at Headquarters and Field Offices with timely and useful management information. (CFO)* (FULLY SUCCESSFUL)	**CM3-1 IMPROVING MANAGERIAL PERFORMANCE AND ACCOUNTABILITY** ! *Identify functional and technical system requirements for developing a Business Management Information System (BMIS) with a special emphasis on financial management, and develop business scenarios for its evaluation (a milestone of a FMFIA corrective action plan). (CFO)* ! *Develop annual performance-based budgets by using DOE's corporate Strategic Management System to link resource requirements to five-year plans, make independent project validations, and perform cross-cutting program evaluations. (CFO/PO)* ! *Conduct self assessments to measure organizational performance in the areas of Customer Satisfaction, Employee Satisfaction, and the achievement of Business Results using the Malcolm Baldrige, President's or Energy Quality Award Criteria. (MA)*	**CM3-1 IMPROVING MANAGERIAL PERFORMANCE AND ACCOUNTABILITY** ! *Initiate development/ acquisition of a modern, comprehensive Business Management Information System - Financial Management (BMIS-FM) to replace the Department's financial management system by awarding a contract to acquire/develop core financial systems and related modules (a milestone of a FMFIA corrective action plan). (CFO)* ! *Develop annual performance-based budgets by using DOE's corporate Strategic Management System to link resource requirements to five-year plans, make independent project validations, and perform cross-cutting program evaluations. (CFO/PO)* ! *Utilize DOE's corporate Strategic Management System to link resource requirements to five-year plans, making independent project validations, and performing cross-cutting program evaluations. (PO/CFO)*

CM-3 Use efficient and effective corporate management systems and approaches to guide decision making, streamline and improve operations, align resources and reduce costs. (CFO, PO, MA, ED, GC) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
! *Developing annual performance-based budgets by using DOE's corporate Strategic Management System to link resource requirements to five-year plans, make independent project validations, and perform cross-cutting program evaluations. (CFO/PO)* (PARTIALLY SUCCESSFUL: Budgets were developed but five-year planning issues were only partially used.)	! ~~*Have every Energy Efficiency/ Renewable Energy program developing progress milestones and estimates of energy-related program benefits annually and at least 25 percent of the milestones and estimated benefits undergoing external peer review each year with a goal of having all milestones and estimated benefits being peer-reviewed at least once every four years. (EE)*~~ <moved to ER-3>	
CM3-2 CONTINUING THE STRATEGIC ALIGNMENT INITIATIVES TO STREAMLINE AND RE-ENGINEER (was CM3-3)	**CM3-2 CONTINUING INITIATIVES TO STREAMLINE AND RE-ENGINEER THE DEPARTMENT**	**CM3-2 CONTINUING THE INITIATIVES TO STREAMLINE AND RE-ENGINEER THE DEPARTMENT**
! *Realizing annual Strategic Alignment Initiative savings commitments totaling $1.7 billion by the end of FY 2000 by:* - *Achieving DOE staffing target of 10,874 by the end of FY 1998, a reduction of 294 FTEs from the FY 1997 end-of-year level. (MA)* - *Consolidating Headquarters personnel into six locations by the end of FY 1998 and achieve $3.8 million savings in rent. (MA)* - *Saving $61 million by reengineering information management business processes. (MA)* - *Reducing technical and support service contracting obligations below $ 610 million. (MA)* - *returning to the Treasury at least $15 million through the sale, transfer, re-use, or disposal of unneeded materials, facilities, land, and other assets. (WT)* (FULLY SUCCESSFUL)	! *Realize annual savings from improved operations to achieve cumulative savings totaling $1.7 billion by the end of FY 2000: (MA)* - *Achieve staffing reductions to achieve Departmental target of 10,613 by the end of FY 1999. (MA)* - *Achieve $65 million in further cost avoidances in information technology. (MA)* - *Reduce support service contracting obligations below $610 million in FY 1999. (MA)* - ~~*Returning to the Treasury at least $15 million annually through the sale, transfer, re-use, or disposal of unneeded materials, facilities, land, and other assets. (WT)*~~[31]	! *Realize annual savings commitments totaling $1.7 billion by the end of FY 2000: (MA)* - *Achieve staffing reductions to achieve Departmental target of 10,269 by the end of FY 2000.* - *Achieve $58 million in further cost avoidances in information technology.*

[31] The program surpassed it's original multi-year, cumulative goal during FY 1998 and was therefore ended by the Secretary.

CM-3 Use efficient and effective corporate management systems and approaches to guide decision making, streamline and improve operations, align resources and reduce costs. (CFO, PO, MA, ED, GC) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
CM3-3 IMPROVING HUMAN RESOURCE PRACTICES (was CM3-4) ! *Hiring 20 Welfare-to-Work recipients by the end of FY 1998 towards the goal of hiring 55 by FY 2000 . (MA)* (FULLY SUCCESSFUL) ! *Implementing a DOE-wide employee accessible automated personnel system by December 1998. (MA)* (SUCCESSFUL) ! *Expanding the use of Alternate Dispute Resolution by 30 percent compared to FY 1997 in mediation of workplace disputes such as EEO complaints and grievances.* (GC) (FULLY SUCCESSFUL) ! *Using the Malcolm Baldrige, President's, or Energy Quality Award Criteria, demonstrating continuous organizational improvement by achieving self-assessment scores of at least 300. (MA)* (FULLY SUCCESSFUL)	**CM3-3 IMPROVING HUMAN RESOURCE PRACTICES** ! *Continue hiring welfare to work recipients to achieve the Presidential goal of 55, 40 of whom will be hired by the end of FY 1999. (MA)* ! *Implement a DOE-wide employee accessible automated personnel system by December 1998. (MA)* ! *Expand the use of Alternate Dispute Resolution by 20 percent over the FY 1998 use to mediate workplace disputes such as Equal Employment Opportunity complaints and grievances. (GC)* ! *Improve workforce skills and reduce training costs by implementing the FY 1999 milestones in the DOE Corporate Education, Training, and Development Plan. (MA)*	**CM3-3 IMPROVING HUMAN RESOURCE PRACTICES** ! *Continue hiring welfare to work recipients to achieve the Presidential goal of 55. (MA)* ! *Increase the electronic transfer of personnel documents through implementation of paperless workflow in CHRIS, reducing personnel paper transactions by 15 percent. (MA)* ! *Expand the use of Alternate Dispute Resolution by 20 percent over FY 1999 use to mediate workplace disputes such as Equal Employment Opportunity complaints and grievances. (GC)* ! *Demonstrate continuous organizational improvement by achieving positive trends as measured by assessments during the Malcolm Baldrige Criteria for Performance Excellence. (MA)* ! *Improve workforce skills and reduce training costs by implementing the FY 2000 milestones in the DOE Corporate Education, Training, and Development Plan. (MA)* ! *Provide best value, high quality and timely Human Resources and Administration products and services so as to sustain a customer satisfaction level of 90 percent. (MA)*

CM-3 Use efficient and effective corporate management systems and approaches to guide decision making, streamline and improve operations, align resources and reduce costs. (CFO, PO, MA, ED, GC) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
CM3-4 MANAGING DIVERSITY TO ACHIEVE THE DEPARTMENT'S MISSION (was CM3-7) ! *Conducting an employee needs survey in order to enhance diversity and determine future strategic direction. (ED)* (PARTIALLY SUCCESSFUL: Survey conducted but determination of future strategic direction not completed.) ! *Evaluating contractor plans and performance to assure full implementation of the Diversity Contract Clause. (ED)* (UNSPECIFIED) ! *Diversifying America's science workforce by enhancing opportunities for minority educational institutions and increasing their awards by 20 percent over FY 1997. (ED)* (UNSUCCESSFUL: The strategies for promoting this goal were not effective.) ~~**CM3-8 MANAGING CONTRACTOR WORK FORCE RESTRUCTURING**~~ ~~! *Implementing a single Department-wide automated contractor workforce employment data system. (WT)*~~ ~~! *Achieving annual recurring cost savings from separated workers that are at least three times the one time cost of separation. (WT)*~~ ~~! *Supporting local community transition activities that will create 8,000 to 12,000 new private sector jobs by the end of FY 1998. (WT)*~~ <moved to NS-3>	**CM3-4 DEMONSTRATING THE DEPARTMENT'S COMMITMENT TO DIVERSITY BY BECOMING A RECOGNIZED LEADER THE FEDERAL GOVERNMENT** ! *Publish in the Code of Federal Regulations, the DOE Mentor-Protégée Program. (ED)* ! *Commit to specific procurement strategies that will increase the participation of women-owned small businesses in the Federal marketplace through a Memorandum of Understanding with the Small Business Administration. (ED)* ! *Enhance America's science workforce by ensuring that minority-serving institutions are afforded and take advantage of the Federal research, development, education and equipment opportunities for which they are eligible and increase their awards by 5 percent over FY 1998. (ED)* ~~**CM3-8 MANAGING CONTRACTOR WORK FORCE RESTRUCTURING**~~ ~~! *Keep involuntary separations to a range of 30-60 percent of all separations while assuring maintenance of essential work force skills mix and productivity. (WT)*~~ ~~! *Achieve annual recurring costs savings from separated workers that is at least three times the one time cost of separation. (WT)*~~ ~~! *Support local community transition activities that will create 10,000 to 15,000 new private sector jobs by the end of FY 1999. (WT)*~~ <moved to NS-3>	**CM3-4 MODELING DIVERSITY FOR THE NEW MILLENNIUM** ! *Increase funding to Minority Educational Institutions by 5 percent over FY 1999. (ED)* ! *Provide two technical assistance seminars for disadvantaged businesses to improve their performance n the energy sector of the economy on a regional basis. (ED)*

Means & Strategies for FY 2000: The Department will continue to conduct core financial functions and implement initiatives to achieve greater accountability and enhanced financial control of government operations. The Department will focus on principal financial management functions and financial and business information needs throughout a major project to implement a Business Management Information System (BMIS) that supports integration with other systems, production of audited financial statements and performance reporting.

CM-4 Improve the delivery of products and services through contract reform and the use of business-like management practices. (CFO, PO, MA, FM, GC)

Long-term Strategies: Over the next several years, the Department will (2) use prudent contracting and business management approaches that emphasize results, accountability, and competition; improve timeliness; minimize costs; and ensure customer satisfaction; and (5) strengthen the management of projects, materials, facilities, land, infrastructure, and other assets, to ensure safe, sound, and cost-effective operations, appropriate maintenance of sites, and to ensure intended project results. (These were strategies 2 & 5 for Strategic Plan objective CM-3.)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
CM4-1 USING PRUDENT CONTRACTING AND BUSINESS MANAGEMENT PRACTICES (was CM3-2) ! *Preparing and submitting Department-wide audited financial statement with an unqualified opinion to the Office of Management and Budget by March 1, 1998. (CFO)* (FULLY SUCCESSFUL) ! *Increasing the number of competitively awarded contracts for major DOE sites and facilities from 13 to 16 by September 1998. (MA)* (FULLY SUCCESSFUL) ! *Converting all management and operating contracts awarded in FY 1998 to performance-based management contracts. (MA)* (FULLY SUCCESSFUL) ! *Hiring a privatization director, developing a Department-wide privatization strategy, and identifying and pursuing privatization opportunities.(S-2)* (FULLY SUCCESSFUL)	**CM4-1 USING PRUDENT CONTRACTING AND BUSINESS MANAGEMENT PRACTICES** ! *Prepare and publish an annual accountability report that includes the Department-wide audited financial statement with an unqualified opinion to the Office of Management and Budget by March 1999. (CFO/PO)* ! *Convert all management and operating contracts awarded in FY 1999 to performance-based management contracts. (MA)* ! *Award 50 percent of all management and operating contracts including three M&O contracts that will change to Federal Acquisition Regulation (FAR) contracts during FY 1999 using competitive procedures. (MA)* ! *Award 50 percent of all support service contracts in FY 1999 as performance-based service contracts. (MA)* ! *Issue a new contractor fee policy by December 1998, as committed to in the Federal Managers' Financial Integrity Act (FMFIA) FY 1997 report. (MA)* ! *Conduct a follow-up assessment of the effectiveness of actions taken in response to the recommendations made by the Performance Based Incentive Report, as committed to in the FMFIA FY 1997 report.(MA)*	**CM4-1 USING PRUDENT CONTRACTING AND BUSINESS MANAGEMENT PRACTICES** ! *Prepare and publish an annual accountability report that includes the Department-wide audited financial statement with an unqualified opinion to the Office of Management and Budget by March 2000. (CFO/PO)* ! *Converting one management and operating contract awarded in FY 2000 to a Performance Based Service Contract (PBSC) using the government-wide standards. (MA)* ! *Convert one support services contract at each major site to PBSC using the government-wide standards. (MA)* ! *Maintain and operate electronic procurement systems installed through FY 1999 to accomplish: (MA)* - *industry interactive procurement processes;* - *electronic procurement system for purchases under $25,000; and* - *paperless procurement actions processing system* ! *Achieve 95 percent of contract professionals certified under DOE professional development standards. (MA)*

CM-4 Improve the delivery of products and services through contract reform and the use of business-like management practices. (CFO, PO, MA, FM, GC) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals

! *Applying business process reengineering to the highest priority procurement processes by September 1998 with a goal of reducing cycle time by 30 percent. (MA)* (FULLY SUCCESSFUL) ! *Improving Federal procurement and property management employee skills by establishing a contracting workforce development program by September 1998. (MA)* (FULLY SUCCESSFUL) ! *Implementing an automated system to track and measure contractor performance by September 1998. (MA)* (FULLY SUCCESSFUL) **CM4-2 APPLYING BUSINESS-LIKE PRACTICES TO MANAGEMENT OF DOE PROJECTS AND ASSETS** (was CM3-5) ! *Meeting established project scope, schedule, and cost baselines by adopting systems based on industry and government best project management practices. (FM)* (SUCCESSFUL) ! *Conducting annual business management self-assessments to ensure that sites are maximizing their resources and maintaining safe and secure operations. (FM)* (SUCCESSFUL)	**CM4-2 APPLYING BUSINESS-LIKE PRACTICES TO MANAGEMENT OF DOE PROJECTS AND ASSETS** ! *Complete four Energy Systems Acquisitions Advisory Board critical actions on required strategic and major systems. (FM)* ! *Verify progress against established project scope, schedule, and cost baselines on projects valued at $5 million or more. (FM)* ! *Accomplish the milestones of the FMFIA corrective action plan for the Departmental challenge of project management. (FM/DP)* ! *Develop a plan by March 1999 to review DOE and contractor litigation cases in state and federal courts for appropriateness of early resolution through mediation. Increase by 20 percent over FY 1998 the number of such cases mediated. Demonstrate estimated savings of 50 percent in litigation costs for those cases settled in mediation as compared to the costs had those cases gone through litigation. (GC)*	**CM4-2 APPLYING BUSINESS-LIKE PRACTICES TO MANAGEMENT OF DOE PROJECTS AND ASSETS** ! *Complete the independent project management reviews and forward the applicable reports and Departmental position papers to Congress. (FM)* ! *Ensure that maximum efficiency, economy, and reliability are achieved and the savings demonstrated as a result of contract negotiations and regulatory interventions, especially with respect to deregulation within the utility industry. Performance will be measured by cost avoidance greater than at least twice the cost of running the program. (FM)* ! *Verify progress against established project scope, schedule, and cost baselines on projects valued at $5 million or more. (FM)* ! *Define and pursue innovative strategies for promoting mortgage reduction through dispositioning excess property, including real estate, facilities, and materials. (FM)*

CM-4 Improve the delivery of products and services through contract reform and the use of business-like management practices. (CFO, PO, MA, FM, GC) (Continued)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
		! *Increase by 20% over FY 1999 the number of DOE and contractor litigation cases in state and federal courts settled through mediation, demonstrating estimated savings of 50% in litigation costs for those cases settled in mediation as compared to the costs had those cases gone through litigation. (GC)*

Means & Strategies for FY 2000: The Department will continue the use of performance agreements with the President and use the results of the FY 1999 agreement as the basis of the Department's Accountability Report for FY 1999 due in March 2000. It is intended that this audited report will exceed the requirements for the first annual report under GPRA and build on a record of "clean opinions" from the Inspector General. The Department will also begin to use the government-wide standards for Performance Based Service Contracts in place of DOE's current approach. The Department will contract out to achieve independence in project management reviews and will review and apply more private business practices in the management of its projects and assets.

CM-5 Implement information systems so employees can perform their jobs efficiently and effectively. (MA)

Long-term Strategies: Over the next several years, the Department will utilize, under the auspices of the Chief Information Officer, an integrated Department-wide framework for planning, budgeting, evaluating, and implementing information management requirements to reduce costs and improve operations. (Was strategy 6 for Strategic Plan objective CM-3.)

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
CM5-1 ENSURING DEPARTMENT'S INFORMATION SYSTEMS ARE BASED ON COST EFFECTIVE TECHNOLOGY SOLUTIONS (Was CM3-6) ! *Establishing, by October 1997, the Capital Planning Information Technology Investment Board and operationalize the requirements of the Clinger-Cohen Act of 1996. (MA)* (SUCCESSFUL) ! *Starting the implementation of a five-year information management plan and producing annual operational plans as part of the Department's budget process. (MA)* (FULLY SUCCESSFUL) ! I*mplementing, by January 1998, a Department-wide information architecture with supporting standards to foster $100 million in cost avoidances over the next 5 years. (MA)* (SUCCESSFUL) ! *All departmental elements implementing Year 2000 century date change compliant mission-essential computer systems in accordance with the milestones, guidance, and procedures established by the CIO. (MA)* (SUCCESSFUL)	**CM5-1 ENSURING DEPARTMENT'S INFORMATION SYSTEMS ARE BASED ON COST EFFECTIVE TECHNOLOGY SOLUTIONS** ! *Continue to improve infrastructure to allow staff the capability of accessing and sharing information easily and seamlessly across the DOE complex. (MA)* ! *Continuously evolve the Department-wide information architecture with supporting standards to foster $100 million on cost avoidances by FY 2003. (MA)* ! *Implement all FY 1999 milestones for year 2000 changes for mission-essential systems. (MA)* ! *Develop the Corporate Management Information Program (CMIP) milestone plan and report to Congress. (MA)* ! *Accomplish the milestones of the FMFIA corrective action plan for the Departmental challenge of unclassified computer security. (MA)*	**CM5-1 ENSURING DEPARTMENT'S INFORMATION SYSTEMS ARE BASED ON COST EFFECTIVE TECHNOLOGY SOLUTIONS** ! *Complete all FY 2000 milestones in the CMIP plan. (MA)* ! *Satisfy all program office computing/ telecommunications requirements in Working Capital Fund Service agreements. (MA)*

Means & Strategies for FY 2000: The Department will implement milestones using methods to be described in the Corporate Management Information Program (CMIP) and will build on experiences in improving the information architecture to satisfy program office computing/telecommunications requirements.

CM-6 Improve performance through evaluations, reviews, audits, and inspections. (IG, S1, CFO)

Long-term Strategies: Over the next several years, the Department will evaluate management controls and promote the effective, efficient, and economical operation of the business lines through audits, investigations, inspections, and other reviews.

FY 1998 Performance Agreement Measures & Goals (with status)	FY 1999 Performance Plan Measures & Goals (Revised Final)	FY 2000 Performance Plan Measures & Goals
Note: although not part of the FY 1998 Performance Agreement, the following results are provided for context: ! Completed the Consolidated Financial Statement Audit for FY 1997, one of only eight agencies to render a timely unqualified opinion and complete the audit by the statutory deadline of March 1, 1998. (IG) ! Surpassed goal of completing or having in process 60 percent of the targeted audits as of the end of the fiscal year by achieving 73 percent. (IG) ! Achieved acceptance of approximately 70 percent of investigative cases presented for prosecution. (IG)	**CM6-1 PROMOTING THE EFFECTIVE, EFFICIENT, AND ECONOMICAL OPERATION OF THE BUSINESS LINES THROUGH AUDITS, INVESTIGATIONS, INSPECTIONS, AND OTHER REVIEWS** (was CM3-9) ! *Render, by designated due dates, an opinion annually on the Department's consolidated financial statements, system of internal controls, and compliance with laws and regulations. (IG)* ! *Complete at least 60 percent of the audits planned for the year and replace those audits not started with more significant audits which identify time-sensitive issues needing review. (IG)* ! *Focus investigations on allegations of serious violations of Federal law by: (IG)* S *Obtaining judicial and/or administrative action on 30 percent of all cases in open status during the fiscal year;* S *Obtaining acceptance of 75 percent of the cases presented for prosecution.* ! *Plan and, on a timely basis, conduct reviews based on assessment of risk and/or benefit to key Department programs.(IG)*	**CM6-1 PROMOTING THE EFFECTIVE, EFFICIENT, AND ECONOMICAL OPERATION OF THE BUSINESS LINES THROUGH AUDITS, INVESTIGATIONS, INSPECTIONS, AND OTHER REVIEWS** ! *Render, by designated due dates, an opinion annually on the Department's consolidated financial statements, system of internal controls, and compliance with laws and regulations. (IG)* ! *Complete at least 60 percent of the audits planned for the year and replace those audits not started with more significant audits which identify time-sensitive issues needing review. (IG)* ! *Focus investigations on allegations of serious violations of Federal law by: (IG)* S *Obtaining judicial and/or administrative action on 35 percent of all cases in open status during the fiscal year;* S *Obtaining acceptance of 75 percent of the cases presented for prosecution.* ! *Plan and, on a timely basis, conduct reviews based on assessment of risk and/or benefit to key Department programs.(IG)*

Means & Strategies for FY 2000: The Department will conduct self-assessments and evaluations of management controls within all Departmental elements in accordance with FMFIA. The Department's Inspector General will prioritize audits, investigations, inspections, and other reviews to address those areas of most impact with the limited resources available and will request, through the appropriate budget process, additional audit resources.

Resource Requirements

The Department will only achieve its goals and objectives with adequate financial, human, infrastructure, and technical resources.

In developing this plan, the Department projected budget appropriations consistent with the OMB's guidance for budget deficit reduction targets through FY 2002. Federal staffing levels are based upon the Department's Strategic Alignment Initiative targets (targets that do not include the Federal Energy Regulatory Commission and the Power Marketing Administrations) established in 1995. These targets call for an overall federal staff reduction of 27 percent by the end of FY 2000 to a level of 10,269. In addition, DOE will reduce contractor staffing levels to 91,000, a 38 percent reduction from the peak level of 148,686 employed in FY 1992. Additional decreases in budget or staffing levels will adversely impact the Department's ability to meet its commitments. A matrix was presented with each business line displaying the program/decision units that support the business line objectives. Attached is the composite matrix for all business lines showing those programs that support objectives in more than one business line. Additional resource requirements and special programmatic needs are described below.

In the National Security area, replacing nuclear testing with a science-based stewardship and management program will require development of advanced experimental and computational capabilities. Additionally, workforce skills will shift from nuclear weapons design, testing, and analysis to modeling, simulations, and systems analysis. The loss of nuclear expertise through staff aging and attrition will need to be minimized. Construction of the National Ignition Facility and the Dual-Axis Radiographic Hydrodynamic Test Facility will provide new experimental test capabilities. Additionally, a source for tritium will be needed to provide an adequate supply for the enduring nuclear weapon stockpile. New facilities will be required to disassemble and convert surplus plutonium pits and fabricate mixed oxide fuel for burning in existing commercial reactors. Existing or planned high level waste vitrification facilities, coupled with new material preparation facilities, will be required to immobilize surplus weapons plutonium. Modifications to existing or planned facilities will be utilized for the long-term storage of surplus fissile materials.

The Environmental Quality cleanup goals and objectives reflect the pressing need to reduce spending in the short term, while reducing both economic and environmental liabilities in the long term. Achievement of the accelerated environmental cleanup goals and objectives is dependent upon receiving stable funding at about the current funding level. In addition, accomplishment of these goals and objectives depends upon effective implementation of a wide array of management initiatives designed to substantially reduce life-cycle costs, improve processes, and enhance performance. These initiatives include reducing support costs, creating the right incentives through performance-based contracting, optimizing project sequencing to reduce fixed costs, privatization and use of private-sector technology and experience, deployment of innovative technology, and benchmarking for process improvement. With regard to civilian radioactive waste, if legislation authorizing interim storage is enacted, substantial additional funding will be required for site-specific construction and procurement of waste acceptance and transportation equipment and services.

In order to meet the Nation's needs for cutting-edge science, DOE will have to periodically replace or make major upgrades to aging or outdated major experimental facilities. These needs will be weighed against the benefits from cost-effective modifications to existing facilities to ensure that the maximum national benefits are derived from existing infrastructure—this recognizes, however, that many of these science facilities have a finite useful life. The Secretary of Energy's Advisory Board has been asked to examine the long-term needs for advanced scientific research facilities to accomplish DOE's Science and Technology objectives.

Major acquisitions of resources that support the delivery of the results proposed for FY 2000 are addressed in the Departments' Capital Assets Plan.

Validation and Verification

Validation and verification of the reported status will be accomplished by periodic guidance, reviews, certifications, and audits. Guidance for the staff making reports and training on reporting and documentation expectations are issued and conducted in the Fall when the staff is reporting on the previous year's results. Our reporting process includes certifications by heads of organizational elements and reviews of records. The data sources are primarily within the program offices performing the work, the National Laboratories, or our contractors, but we will move toward independent or external sources to ensure objective measurements. The performance reporting process includes internal correspondence issued to heads of Departmental elements requesting the status of performance

commitments in the Secretary's performance agreement and emphasizing the importance of ensuring that the information provided was accurate and complete. Internal management controls will continue to be applied to ensure the data quality and heads of elements formally certify the accuracy of the data at the end of the year.

In preparing audited financial statements, the Chief Financial Officer and Policy Office will issue guidance and conduct training for Secretarial Officers and their staffs, stressing their roles in the preparation of the financial statements and required management representation letters. Management representation letters attest to the accuracy and reliability of financial information and performance results. As requested by the Secretary, management representation letters will be signed and provided by all heads of Departmental elements responsible for performance commitments in the agreement to the Secretary and included the following attestation on performance measure information: "We acknowledge our responsibility for the fair presentation of the performance measure information presented in the Overview section and the Supplemental Information of the financial statements. We believe this data to be accurate and reliable." This attestation will indicate that each program office is aware of their responsibility for the performance measure data and the necessary validation and support documentation to ensure its accuracy and reliability. The Department will issue guidance and offer training to program offices to clearly delineate their specific roles and responsibilities in the preparation of the financial statements and related program performance reporting in order to ensure that the performance measure reporting structure is sufficient to capture reliable data for future financial statements. The Department will also conduct internal reviews of reported status to assure itself of the validity and veracity of the reported status of the performance measures.

The Department has been using a computer system called SOLOMON to collect and present results and performance assessments for the annual Secretary's Performance Agreement with the President. It has been used since the first Performance Agreement for FY 1995. SOLOMON is a World-Wide-Web based system to allow remote data entry, monitoring, and oversight. Data entry is controlled through a password system that provides an auditable record of changes. Program offices and managers directly update results and performance assessments during the year and the end of year information is used for analysis and preparation of the "Accountability Report".

In accordance with the Federal Managers' Financial Integrity Act of 1992, the Department will continue evaluations of its management controls in effect during the fiscal year. Our evaluations include an assessment of whether the management controls of the Department were in compliance with the standards prescribed by the Comptroller General. The purpose of these evaluations is to provide reasonable assurance that the management controls are working effectively, that program and administrative functions including the accuracy and reliability of the reporting of performance results are performed in an economical and efficient manner consistent with applicable laws, and that assets were safeguarded against the potential for waste, fraud, abuse, or mismanagement.

The Department's reporting of performance and financial information has been audited by the Inspector General for the past two years and received an unqualified opinions. However, the Inspector General did note weaknesses in accuracy, validation, and maintenance of data in the system. The most recent audit will be published on March 1st and the Department will address the weaknesses in the FY 1998 reporting that affect performance for FY 2000.

The Department will only use the Inspector General's audit of the financial statements which provides an independent confirmation on the accuracy of the performance measure information in the financial statements, as a second check on the accuracy and reliability of the reported status. The programs are the first line management responsible for their reported results.

Waivers

The Department has requested to be part of the Office of Management and Budget pilot program using an "Accountability Report" to consolidate annual reporting of financial information as allowed by the Government Management Reform Act of 1994. The Department intends that this annual report will also meet the requirements for an annual performance report in accordance with the Results Act. The Department has made no other request for waivers of administrative requirements to provide managerial flexibility.

Next Steps for this Plan

This Performance Plan is a proposal associated with the proposed budget for the Department. Although not required under the Results Act, but allowed by OMB, the Department intends to convert this proposal into a performance agreement once the budget for the

Department is signed into law. The Department has developed performance agreements after budgets were enacted since FY 1995. The performance agreement for FY 2000 will resolve differences between the proposed budget and performance plan and the enacted budget. The performance agreement will contain the proposed performance goals of the Annual Performance Plan for those activities that are fully funded and will appropriately adjust those performance goals that are funded at a level different from the proposed budget.

The Department intends to report to the public quarterly on the status of performance as it has with previous performance agreements. Additionally, the Department will report to the Congress annually as required by the Results Act, Government Management Reform Act of 1994, and the DOE Organizational Act of 1977.

Demonstrating Credible Performance

This Performance Plan builds on the experience the Department has gained in collecting and reporting performance data each year since our first Performance Agreement between the Secretary and the President in FY 1995. Since then, we have been collecting performance results data for Secretarial performance measures of success and making them available to our stakeholders. In fact, we demonstrated to the National Performance Review that we were actively tracking our progress on the first agreement before it was even signed. The performance data for FY 1997 is available on our Web site (http://www.doe.gov/policy/sms/sms.html).

In addition, beginning in FY 1996, our results have been subject to independent review by the Department's Inspector General. In the spirit of the recent management reform laws, Government Management Reform Act of 1994, as well as the Government Performance and Results Act of 1993, we began using the results data from the performance measures of the Agreements as the basis of the results reviewed for the financial statements. The first year the Department produced consolidated annual financial reports, FY 1996, which included results of performance compared to performance measures from the Performance Agreement, the IG was able to provide an a unqualified opinion. The same was true for the second year, FY 1997. However, we recognize that our data collection and validation efforts can be improved and intend to make improvements for FY 1999 as we continue to make DOE more productive and accountable to the taxpayers.

Criteria for Annual Performance Plan Performance Measures & Targets

The following criteria guide the development of annual performance measures & targets:

PRESIDENTIAL (1) a significant budgetary obligation, (2) White House interest has been demonstrated, or (3) there is Secretarial intent to raise to it to the Presidential level.

SPECIFIC Plainly state precisely what will be done in this fiscal year.

QUANTIFIED Clearly state the measurement and target level of performance. Naked percentages are too vague without specifying the base--instead, state the from and to levels with an optional percentage.

MEANINGFUL Each commitment must stand alone without knowledge of last year's Agreement or Plan or our performance results to link the measures to the commitment statement. Why it will be done, i.e., the purpose or planned outcome. The "so as to ..." should be clear for each measure.

STRETCHING Should have 80% confidence in meeting target during the fiscal year. Higher confidence is under committing--lower percentages are over committing.

CONCISE Statements of commitments and measures should be short, direct, and to the point. A commitment with measures should be between 5 and 25 lines (i.e., 30 to 125 words). Explanations should not be included. The object is to produce an Agreement that is short enough that it would actually be read.

WRITTEN FOR TAXPAYERS Written in common language and requiring only a newspaper article level of knowledge of DOE and world events.

COVERING The overall Agreement must reasonably represent the whole of the resources we are entrusted to apply to the Department's mission in this fiscal year.

AUDITABLE Each success measure should be based on factual information, so that the IG and/or GAO will be satisfied if they were to do an audit.

DOE Office Designations

The business line objectives and performance measures and goals are annotated with the responsible DOE office(s) in parentheses. The two letter office designations are listed below.

CR	**Chief Financial Officer**
DP	**Defense Programs**
ED	**Economic Impact & Diversity**
EE	**Energy Efficiency & Renewable Energy**
EH	**Environment, Safety & Health**
EIA	**Energy Information Administration**
EM	**Environmental Management**
FE	**Fossil Energy**
FM	**Field Management**
MA	**Management and Administration (formerly Human Resources)**
MD	**Fissile Materials Disposition**
NE	**Nuclear Energy, Science & Technology**
NN	**Nonproliferation & National Security**
NR	**Naval Reactors**
PC	**Privatization and Contract Reform**
PO	**Policy and International Affairs**
PMAs	**Power Marketing Administrations**
RW	**Civilian Radioactive Waste Management**
S1	**Secretary's Office**
SC	**Science (formerly Energy Research)**
WT	**Worker & Community Transition**